University of Alberta

A Study of the Engagement of Children's Minds in the Project Approach

by

Lorraine Frances Leskiw ©

A thesis submitted to the Faculty of Graduate Studies and Research in partial fulfillment of the requirements for the degree of Master of Education.

Department of Elementary Education

Edmonton, Alberta
Fall, 1998

National Library of Canada
Acquisitions and Bibliographic Services
395 Wellington Street
Ottawa ON K1A 0N4
Canada

Bibliothèque nationale du Canada
Acquisitions et services bibliographiques
395, rue Wellington
Ottawa ON K1A 0N4
Canada

Your file Votre référence

Our file Notre référence

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-34456-8

Canada

University of Alberta

Faculty of Graduate Studies and Research

The undersigned certify that they have read, and recommended to the Faculty of Graduate Studies and Research for acceptance, a thesis entitled **A Study of the Engagement of Children's Minds in the Project Approach** submitted by Lorraine Frances Leskiw in partial fulfillment of the requirements for the degree of Master of Education.

September 30/98

Dr. Sylvia Chard (Supervisor)

Dr. Joyce Bainbridge

Dr. Julia Ellis

Dr. Ingrid Johnston

ABSTRACT

The qualitative study presents an exploration of the meaning of the term, "engagement of children's minds". I begin with a description of an incident that began my search, a review of the literature on the Project Approach and my experiences with this method of teaching and learning. The second part of this study tells the story of The Peach Boy, a partial project, and The Playground, an entire project, as they evolved in a grade one-two class over a period of two-and-a-half months. This story is told from the perspective of a participant-observer through vignettes, samples of children's work, photos, the children's reflections, and my own reflections.

DEDICATION

This thesis is dedicated to:

My mom and dad, whose love and support, instilled a love of books, learning, and life in their five children. Dad, this completes a vow made so many years ago when I was just beginning university and told you I would get a Master's Degree. That journey is now complete, and I couldn't have done it without you and Mom.

ACKNOWLEDGEMENTS

My heartfelt thanks and appreciation to all those who, in some way, contributed time and effort to ensure the completion of this dream.

To Dr. Sylvia Chard, my advisor, for introducing me to the Project Approach, and then encouraging and guiding me through all stages of my work.

To Dr. Julia Ellis, for her patience and time explaining about Qualitative Research, her advice and encouragement.

To Dr. Joyce Bainbridge and Dr. Ingrid Johnston for serving on the committee.

To the staff, students, and parents of The Child Study Centre for welcoming me into their classrooms and providing such a rich and rewarding experience.

To Gwen, Dr. Jackson's secretary, for her encouragement and assistance. You assured me this could be done.

Jennifer, for her computer expertise to put this all together so efficiently and professionally.

To my former students who completed Project. . . Pumpkin for providing the inspiration to go on further.

To my colleagues and friends for their interest and encouragement. You made me feel a part of the staff even though I was not there.

To all the new friends I made on Campus during my graduate studies for their encouragement and support.

To my sisters and brother and their families, for their love and for so willingly pitching in to help whenever they could.

And finally, to the three men in my life: Steve, Ryan and Chris whose unconditional love and encouragement pulled me from those moments of despair, and kept me focused on attaining my dream.

TABLE OF CONTENTS

Chapter I: In the Beginning 1

Chapter II: Background to the Study 6
- Review of Literature 6
- My Experience with the Project Approach 11

Chapter III: Framework of the Study 24
- Philosophical 24
- Methodological 27
- Context of My Observation 31
- Ethics 32

Chapter IV: The Peach Boy Project 33

Chapter V: The Playground Project 47
- PHASE ONE 47
  - Model Willow Furniture 47
  - Discussion of the Playground 53
  - Block Representations 60
  - Creating the Web 71
  - Designing Research Questions 77
  - Researching the Questions 79
- PHASE TWO 82
  - An Expert Visits 82
  - A Field Visit to Playgrounds 84
  - Doing the Research 87
  - Representations 93
- PHASE THREE 115

Chapter VI: Revisit with Students of the Pumpkin Project 116

Chapter VII: Discussion 131

References: 146

CHAPTER I

IN THE BEGINNING

The shrill ringing of the bell, marking the end of the noon recess, rudely interrupted my train of thought. I had been sorting resources and materials for the afternoon's project work. Now I walked over to the door to greet my grade one students as they entered the classroom. As I bent down so that Tom could touch my cheeks to show me just how cool it was outside this frosty October day, I overheard another of my students talking to a grade two friend.

"I have to hurry--we get Projects this afternoon."

"What's Projects?" inquired her friend.

Without any hesitation, Liza replied, "Well, it's work but it's funner. We get to work all afternoon."

"I'll see you at recess then," commented her friend.

"Maybe. If I'm busy on my project, I don't know if I'll want to leave my work," was Liza's answer. I then went to assist Andrew with the zipper on his jacket and Liza's comments were forgotten.

Once everyone had settled in their desks, I read the story, The Biggest Pumpkin Ever, by Stephen Kroll. The class and I then discussed what this pumpkin had needed to grow so big, and compared these responses with those ideas we had brainstormed on our mind map. And now, finally, the students were ready to begin their project work.

They gathered the materials and resources they thought they might need, and found a place to work. Some chose to work alone, and others in groupings of various

sizes. I helped students carry the materials but other than that I had no directing role in what was being set up.

Let me digress a bit, and explain about the project. The Project Approach is one of the ways that teaching and learning are approached and viewed in carrying out an in-depth study on a particular topic. Burchfield (1996) states that the Project Approach is a "real-world, user friendly guide to organizing purposeful, social, active and engaging units of study that allow children to be involved in making decisions about the direction, implementation and evaluation of the learning" (p. 6). Because our community is the site of the Great White North Pumpkin Fair and Weigh-Off each October, a project study of pumpkins seemed only natural. We had all shared our experiences with pumpkins. We had brainstormed what we knew about the topic and constructed a mind map to guide our recall of these facts. And now the students were making representations of what they knew about the topic. Several different ways of representing information had been discussed in depth. My aide and I would encourage and assist as needed.

The work began! Andrew did not take much material to his desk, only two sheets of computer paper that were joined together and felt pens. Andrew enjoyed working on his own. I was sure he would show some of what he knew about pumpkins in a cartoon, and I was not disappointed later when I stopped by his desk to see his work and listen to the conversation between him and a classmate.

"Pumpkins don't have green blood," commented the classmate.

"Well, not exactly blood. But if the pumpkin has some kind of bacteria and starts to spoil, the insides become gooey and watery--like blood. And if the pumpkin hasn't

ripened yet, it probably will be green stuff." Hmmm. . . very interesting. I recorded the conversation on a post-it note on my clipboard.

Diana wanted to discuss what printing was needed on the prize ribbon she was designing for the winning pumpkin. Had she ever won a ribbon? She replied that she had but could not recall what was on it. As we thought of where we could find a prize ribbon, Diana recalled the display case in the foyer. We went out to check--yes, there were a few prize ribbons there. I helped her read the information and then off she went to work, to complete her ribbon. Diana returned to the display case on her own two more times to check the spelling of the words on the ribbons, and then adjusted the letters on hers.

Spread out on the floor amongst several sheets of paper, pencils, felt pens and crayons was Carrie. She was very busy designing and developing a children's activity/coloring book that perhaps could be given out to the children who arrived at the entrance to be admitted to the Fair. She wanted to include coloring pages, a maze, a seek-a-word puzzle, and a sheet entitled, "What I saw at the pumpkin fair". This would take some time but her determination and interest would see her through.

Beside our "pumpkin" display, a group of seven students were completing observational drawings of pumpkins. Because observational drawings were a relatively new concept, I sat down on the floor with them to review what to include. At this time, the grade two teacher stopped by to borrow a book. She couldn't see myself or the aide so she asked the nearest student where I was. A loud voice boomed out, "Mrs. Leskiw!" and I stood up. As I handed my colleague the requested book, she commented, "Interesting!" She observed a few seconds and left.

After school, that colleague returned to talk to me. "What were you doing this afternoon when I came in?" she asked. "Everyone was so involved I just had to find out more about what was happening."

"Yes," my aide and I both agreed. "Everyone had worked extremely well." We tried to explain briefly about the Project Approach work. My aide commented about our initial discussions sharing our pumpkin experiences. "Everyone had something to share, and they listened so attentively. Sometimes they laughed at what had been related, and sometimes their feelings of sadness or concern for the speaker showed. But what a great discussion!"

We talked a while longer, and then I was left alone. But I just could not leave. I had to sit down, reflect on what had transpired this afternoon. The Project Approach was something I was trying for the first time and I was pleased that it had gone so well not only in my eyes, but in those of colleagues as well. Yes, the afternoon had been rather magical. Why even, Jacob, the ADHD child in my class who simply exploded at the smallest frustration or departure from his agenda, had "worked" uneventfully all afternoon. True, he had not yet produced a representation--he was, "just looking at everything so I can make up my mind. I will do something tomorrow." But I had noted he had asked the aide to read a book to him. We would build on that tomorrow.

While I had noticed the students' eagerness and industry, I also thought about the teaching I had done. I had been much more of a facilitator, a guide, and a sounding board for the students' suggestions and queries. I did not give out answers, but rather made suggestions and encouraged the students to pursue their own avenues of learning. Was this what Lilian Katz and Sylvia Chard (1989) had in mind with the phrase, "engaging

children's minds"? What made the students so involved? What had Liza really meant when she had said, "It's work but it's funner"?

To gain further insight into what I had observed this afternoon, I needed to observe much more. This was where this qualitative study began.

CHAPTER II

BACKGROUND TO THE STUDY

Review of Literature

The term, Project Approach, describes both a way of learning and a way of teaching. It is "a good example of developmentally appropriate, active, engaging, and meaningful learning" (Helm, Beneke & Steinheimer, 1998, p. 3). An overall aim of the Project Approach is to cultivate the life of the young child's mind (Katz & Chard 1989). The Project Approach is student-sensitive in those areas where the teacher stipulates the conditions of learning, student needs and concerns are taken into consideration. The context is not curriculum-driven but begins with a discussion of common experiences the students have had with the topic being studied. In her book, Talking Their Way into Science, Karen Gallas writes:

> I believe that when a community of learners begins with the act of dialogue about the world, and when that dialogue occurs outside of the theoretical or conceptual influence of the teacher, it moves more naturally and vitally toward theory and a readiness for instruction and study. This is the point at which the appropriation of the discourse of science begins. In this process the students take on the voice and the authority of scientists. They begin to bring their world of experience into the classroom in the form of personal narratives and important questions, realizing as they do that what they observe, wonder and imagine has importance in a science classroom. In this way teachers and children move purposefully together toward an inclusive kind of talk about science where everyone is admitted. (p. 3)

Although Gallas addressed science talks specifically, I believe all references to science could be omitted and the word, scientists, changed to experts, and this quote then is valid for the Project Approach as well.

In project work children can choose to follow their own research questions. They design, plan and carry out their research investigations with the guidance of the teacher. They regularly report their work to the other students in the class. Completed work is shared in a variety of presentations. Cooperation and collaboration play significant roles in the process of learning.

In addressing children's learning, the Project Approach considers four major types of learning goals:

1. knowledge--or the "contents of mind" refer to such things as schemata, ideas, facts, concepts, information and stories

2. skills--discrete units of action that can be fairly easily observed and are completed within a relativly short time

3. dispositions--habits of mind or tendencies to respond to situations in particular ways; and

4. feelings--subjective, emotional or affective states (Katz & Chard, 1989).

By stressing these learning goals, the Project Approach ensures the development of the whole child, and addresses the child's proficiencies rather than deficiencies.

In encouraging the development of the whole child, the role of the teacher changes to one of facilitator or guide, rather than instructor. To maximize the learning potential of each student, the teacher must have developed the major types of learning goals for the

completion of the project. These skills can then be transmitted to the students as goals worthwhile pursuing and using. Teaching and learning are indeed interactive processes.

A project develops through three phases (Katz & Chard, 1989); in each phase the teacher has particular concerns for the children's learning. In phase one the teacher encourages discussion of common experiences to determine what the students already know and the first-hand experiences in which they have participated to form this knowledge. What is known is represented in a variety of ways and shared with classmates. This phase concludes with the development of questions the students would like to investigate and the construction of a topic web.

The second phase involves carrying out fieldwork and inviting experts to talk with the children. New first-hand experiences are provided and resources collected to use as the study develops. Students read, write, draw, compute, gather information, conduct surveys, interview, observe and then represent their findings in many ways. A representative selection of the work is displayed for all to see. In making the choices for the display, the students are involved in evaluating their work (Katz & Chard, 1989).

In the third and last phase, a culmination of the work completed in the project is shared with others. Work is reviewed and evaluated, and completed work items are chosen for sharing. Communication skills and collaboration are emphasized in this phase (Katz & Chard, 1989).

The ideas presented in this overview of the Project Approach are not new. In the later decades of the nineteenth century and the early ones of the twentieth century, John Dewey (1938) advocated that "all genuine education comes about through experience" (p. 25) in his promotion of "progressive education". "The child's own instincts and powers

furnish the material and give the starting-point for all education" (Ulich, 1968, p. 629). Each experience will elicit responses from the student that, in turn, will help develop attitudes that will determine if future experiences will be of the same nature or something new. There must be the continuity to pursue experiences, and the freedom to participate as the student chooses.

Goodlad, Klein and Associates (1970) talked with teachers, principals and superintendents across the United States about the state of progressive education in elementary schools. They restated the need to use experience as the basis for education. "There are certain pedagogical concepts or principles which are generally applicable in childhood schooling, if one takes time to study the prime subject matter. But this subject matter is children. . . " (Goodlad, Klein & Associates, 1970, p. 9). Students must be provided with every possible opportunity to develop their talents and strengths. There is no one way to achieve this--students must be shown a number of alternatives. They must assume responsibility for their own behaviors. They must learn how to learn, and realize that education is a life-long process.

In the city of Reggio Emilia in Italy, children in the municipal preprimary schools undertake major long-term projects. The founder of the program in Reggio Emilia, Loris Malaguzzi, describes the schools as "an integral living organism, as a place of shared lives and relationships among many adults and very many children" (Edwards, Gandini & Forman, 1993, p. 56). Within the school:

> We make plans and reflections connected with the cognitive, affective and symbolic realms; we refine communication skills; we are very active in exploring and creating along with many other participants, while remaining open to change. . .

> What children learn does not follow as an automatic result from what is taught. Rather, it is in large part due to the children's own doing as a consequence of their activities and our resources. (p. 58-59)

In Reggio Emilia the families of the students and the members of the community are very involved with education. This ensures that many relationships and interactions are possible for the young students.

Lilian Katz visited the schools in Reggio Emilia and wrote about six major lessons in The Hundred Languages of Children: The Reggio Emilia Approach to Early Childhood Education (1993) that could be learned from the education being offered there. Firstly, students can very capably represent what they know and what they have learned using a variety of graphic skills. Choosing a topic that is familiar to every student ensures that everyone will be an "expert" in some aspect, and will have much to share, investigate and present. Secondly, because the children know that the representations they are working on will be used for further discussion and study, they take great care with their efforts to make their work detailed and complete. Thirdly, by incorporating realistic and observational drawings in the everyday work of the children, their imaginative powers are not constrained. Fourthly, by having the teacher-student relationship based on the student's work produced in the context of a project, the relationship is much richer than when relationships depend on the child's scores or marks obtained in test settings. Fifthly, when the adults in the educational process demonstrate authentic interest in the students; what they know, what they have learned and how this is represented, the students produce a higher quality of work. Lastly, by involving the families and the community in the education process, a feeling of community is developed. These six lessons demonstrate

the value of learning as a life-long and worthwhile pursuit, and prepare the students for their place in the adult world.

My Experience with the Project Approach

In this section I shall describe how I became interested in the Project Approach and how my own first experience became the springboard for the research reported in this thesis.

I have been a classroom teacher for several years now. Two of the attitudes that I strive to develop in my students are the love of learning and seeing learning as a life-long process. As the role model for my students, I try to demonstrate these in the life that occurs in our classroom. To this end I engage in professional development activities--reading, discussing, attending workshops and conferences. I am continually on the look-out for new ideas that could be implemented to improve my program.

When I began my postgraduate studies, I became aware of the Project Approach. I purchased the two Practical Guides for Teachers (Chard, 1992 & 1994), and read them along with other articles I had discovered in my perusal of various educational journals. Then I enrolled in a course on the Project Approach and was given the opportunity to undertake a project study with my grade one students. In fact, both myself and and my university colleagues actually undertook a project study of our own. We began with an orientation and discussion, progressed through field experiences and discussions with "experts", completed representations, shared our ideas to gain new perspectives, and ended with a culminating detailed report.

Each year, during the first weekend in October, our town hosts the Great White North Pumpkin Weigh-Off and Fair. My grade one class was already busy making plans to decorate the window of the local Bakery and designing an entry in the Scarecrow Contest.

So it seemed only natural that Project. . . Pumpkin would be the focus of part of our studies for the next several weeks.

My class consisted of eighteen students. They were a heterogeneous group. I had the services of an aide for about seventy per cent of the day because the class included a multiple needs student and an ADHD child with an extremely low tolerance for frustration.

A review of the curriculum guides provided a list of the knowledge, skills, attitudes and dispositions I hoped would be developed during the study. I would not be able to plan lessons, in the conventional sense, or activities where these specific learning goals would be taught. However, I could wait for opportune moments where they could be introduced and then let the learning continue with the students providing many of the ideas.

As I reviewed those learning goals, I was struck by how valid these same learning goals also became for me, the teacher, in my attempts to maximize the learning potentials of my students. I first had to think about how I could myself model this knowledge, these skills, these dispositions and these feelings for the children. Providing models for my students would show the goals worthwhile pursuing and thus likely to become internalized by them through the interactive processes of teaching and learning (Chard, 1998).

Once I knew in which direction to head, we could begin the Phase One activities. The goal of these activities is to "establish common ground among the participants by pooling the information, ideas and experiences children already have about the topic" (Katz, & Chard, 1989, p. 82). I initiated discussion by sharing how I had recently removed the pumpkins and vegetables from my garden due to the threat of frost. The pumpkins had been stored in a cold storage room and I wondered how long it would take for them to turn orange. Now the students contributed their experiences. I listened and recorded. It is

important during this stage to note any misconceptions that may have been expressed so that these may be corrected in the course of the project work (Chard, 1998). Taryn sadly indicated that her family had never had a pumpkin.

"Yes, you have," her classmates immediately responded. "Last year in Kindergarten, we carved jack-o'lanterns."

"You mean jack-o'lanterns are pumpkins?" she asked haltingly.

Another classmate offered further explanation, "A pumpkin is what you start with, and when you put a face on it, it's a jack-o'lantern."

"Then I've had lots of pumpkins," replied Taryn. A faint smile could now be seen on her face.

A comment from Diana brought forward the need to clarify the distinctions between the terms, biggest and heaviest. "Did you know that the biggest pumpkin last year was a plastic one?"

"If it was made of plastic, it couldn't weigh the most," responded Allen.

"But I didn't say heaviest," countered Diana. "I said the biggest."

But perhaps the greatest controversy arose over the issue whether the pumpkin was a fruit or a vegetable. It was evident from these examples that some issues had to be addressed through the provision of first-hand experiences. The following activities were planned: measurement activities to clarify the terms, heavy and big; obtaining a giant pumpkin seed to compare with a regular-sized one; providing seed catalogues and books to determine if the pumpkin was a fruit or a vegetable; making pumpkin puree and using it for baking some treats; and trying to find the class a real giant pumpkin.

Now the students were asked to represent what they knew about pumpkins. I had envisioned a variety of ways to illustrate this knowledge; but left to choose for themselves, all the students completed journal-type entries. But really, what more could I have expected? The students had been in school for not quite a month and I had focused solely on journals as a way of sharing ideas and information. I had not modelled any other methods so how could I expect these young students to produce them? The quality of the work produced was also not what I had expected, either. But I gathered several samples of work to set up in a display. As a class we discussed what were the outstanding features of these samples that distinguished them from others.

A literature selection from a reading anthology and a brainstorming session provided a list of many ways to represent information. Now when the students were asked to represent the knowledge they wished to share, what a delightful variety they chose: a cartoon, a diorama, a coloring/activity book, a new prize ribbon, a grocery list for pumpkin pie, a button for the Pumpkin Weigh-Off and Fair, a memory drawing, a greeting card.

The expectations were more clearly understood, and the work produced was of a higher quality. Students were encouraged to explain what made their representation outstanding. Classmates could add comments or ask questions. Being able to discuss one's work with others and then being given the opportunity to comment on the work of others made the process of evaluation so much more powerful than in situations where a teacher only assigned a grade when the work was finished. There was an increased level of independence and resourcefulness. Students were able to appreciate the work of their classmates, see value in it, and gain information from their evaluations.

The students moved on to create a web for Project. . . Pumpkin. They recorded words or phrases, or drew simple diagrams to illustrate what they already knew about pumpkins on post-it notes. These ideas were classified, and headings provided. As items on the web were discussed, questions concerning what was not known or what students wanted to know were formulated. These would become the research concerns for our study. We would investigate them when we participated in field visits or welcomed experts into our classroom.

A display of pumpkins of varying sizes and shapes, gourds, squash and zucchini was arranged in one corner of our classroom. Secondary resources (encyclopedias, books, seed catalogues) were also provided. These fuelled our discussions as to whether the pumpkin is a fruit or a vegetable. The students were able to look at the pictures and illustrations but because of their limited reading abilities, I had to become actively involved and read the information for them. I had intended to stay in the shadows of my students' learning, but reality dictated active participation at this time.

Media attention began to focus on the Weigh-Off and Fair. One news item described the damage done to a Weigh-Off entry by three youngsters who had broken into a greenhouse. The first grade students were horrified that anyone would commit such an act. The punishments my students devised were very fair, and much to their delight, some of their suggestions were actually implemented.

The Weigh-Off and Fair were but a day away. Excitement mounted. Our scarecrow display was hauled to The Complex, site of the festival.

And then the day had arrived! Our Phase Two activities were beginning. The students attended the Weigh-Off Fair with their families. A letter had been sent home

explaining our study and encouraging attendance at the event. As well, suggestions for enhancing their attendance were included: taking photographs, examining the pumpkins, discussing what had been seen or participated in, and recording ideas.

The students literally burst into the classroom on Monday morning. Naturally, the first concern was, "Did we win?" in reference to our scarecrow display. I displayed the first prize plaque we had been given. What smiling faces! The day would be devoted to discussion of what had been observed and learned. The discussion was animated. Despite the fact that we discussed all morning long, there was little repetition. Some of the things the students had observed, I had not even seen. Everyone had comments to offer or answers to questions we had recorded or new questions to ask that related to the weekend's events. There was particular interest in my conversation with the growers of the pumpkin that had sustained the vandalism.

That afternoon we answered a knock on our door to find four men with a carrying cloth holding a giant pumpkin.

"May we leave this here? Or should we take it elsewhere?" the men asked.

Of course, a chorus of, "Leave it here. We want it!" answered their questions. And so our classroom display now had a 187.5 pound addition.

Many questions and comments were made comparing what would become known as "our pumpkin" with the one that captured top prize at the Weigh-Off and Fair. It did not matter that ours was significantly smaller; it was ours, and that was all that mattered. The students felt the peel of the pumpkin, smelled it, measured themselves and other objects in comparison to this giant, and even sat on it. One student had her mom bring in her new baby kitten to take a picture with the pumpkin a few days later. In the latter part of that day, we

were able to begin making some representations to share what we had seen and learned. One activity that we conducted as a class was the construction of a huge pumpkin patch on a hallway bulletin board. The pumpkins the students made had a variety of sizes and shapes, but all were orange. These were positioned on the bulletin board, larger pumpkins in front, and smaller ones higher up so as to create a three-dimensional effect. Leaves and vines were added. This display would acquire additions on two occasions--once, when the district agriculturist informed us that one leaf produces about three pounds of pumpkin. Our bulletin definitely needed more leaves for all the pumpkins we had. And on a second occasion, when we found a spider spinning a web near our giant pumpkin. The students briefly researched and hid illustrations of eighteen spiders among the leaves and challenged the other elementary students to find all of them.

Experts who visited our classroom were the district agriculturist and the lady who grew the giant pumpkin in our classroom. For the visit of the agriculturist, the grade one children learned how to conduct an interview. One student volunteered to welcome him into our classroom, and another thanked him for coming. All students had at least one question to ask of him. The class excelled. Even the agriculturist commented that he was impressed by the questions asked.

During the visit of the "pumpkin lady", the students watched as she carved our giant pumpkin for Hallowe'en. She was especially conscious of making this a true learning event. She also cut open a regular pumpkin so the thickness of the walls, the textures and the "insides" of both could be compared. The seeds for both were kept for counting. The students were amazed that their giant pumpkin did not have very much flesh or a great number of seeds.

Completing the Phase Two representations took almost two weeks. There was a good deal of group work, co-operation and collaboration. But the students did not use this situation as an excuse for non-productiveness. No student was satisfied with just one representation--there was much to see and do. Each group had an opportunity to bake a pumpkin treat. The baked goodies were frozen until such time as we decided what to do with them.

Someone suggested that thank you notes be sent to our visiting experts. Two groups of volunteers composed the notes and took them to the school secretary to have them typed. Envelopes were addressed and the letters stuffed into them for mailing.

The last thing to be done in Phase Two was the carving of the "little" pumpkins into jack-o'lanterns for our Hallowe'en celebration.

Phase Three involved a culmination of Project. . . Pumpkin to showcase what had been learned during the study. This "is intended to communicate learning, but it does not need to be a precisely learned, formally scripted and rehearsed occasion. Room can be allowed for spontaneity and improvisation" (Katz & Chard, 1989, p. 125). The students remembered the wooden blue "TV" at the back of the room.

"Could we use this now?" they asked.

"For what?" I challenged.

"Well, we could make a movie to fit in the rolls," suggested Roz. The others agreed and so a two-part movie was written, illustrated, and glued onto the paper to fit in the rolls. The first part showed what had been learned about pumpkins, and the second highlighted the Great White North Pumpkin Weigh-Off and Fair. It was shown to our grade four "Shared Learning" partners and to the parents when they came in for interviews. In addition,

all the students then chose one item from all their representations to display on the Bulletin Board and around the room where display space was available. The baked pumpkin treats were sampled by the students and the parents.

This had been my first experience with using the Project Approach to learning and teaching, and it had proven to be a very enjoyable and challenging mix--moments of joy, reward and enlightenment occasionally pierced with those relatively brief moments of disappointment and frustration. I wanted to give my students more of this type of learning, but I also wanted to become part of a situation whereby I could observe a project in progress in another classroom where another teacher was in charge. My grade one class would begin another study on Toys in December. However concert rehearsals and other school-wide activities did not allow the completion of the topic as originally planned. The most interesting part revolved around discussion of my favorite toys, my parents' favorite toys, and my grandparents' favorite toys. Most students found it difficult to understand how their grandparents had survived so happily with so few, and in some cases, no toys.

In the spring, we turned to the Project Approach once again in our study of the life cycles of butterflies and frogs. These creatures were examined in great detail literally every

minute of every school day. In fact, one of the students drew our attention to the fact that the tadpole developed its left front leg first. I thought this had to be a mistake of nature, but Allan found a book in the public library that explained this phenomenon. Allan, in fact, became so immersed in the topic of frogs that he created a "home" for several of the frogs in his backyard, and kept us regularly informed of the developments that occurred there.

Aspects of the Project Approach that especially intrigued me and encouraged me to seek out further study included: the involvement of the students as they worked; the length and quality of the discussions; the change in teacher role; the variety of representations produced; and the development of the self-evaluation skills of the students.

I was amazed by the depth to which some of the students wanted to continue learning about a particular aspect of the topic. I knew that students at this age had learning spurts, and I hoped to facilitate such learning. This approach to learning definitely helped me do so. Take Paul, for example. He would quickly complete his work "any old way" and had many difficulties with school work. His interest was usually of short duration. He would often call out, "Teacher, I'm all finished. What do I do now?" It seemed as though his being completed first would compensate for the lack of understanding. But in our project work, I noticed he was spending more time on his assignments, and giving more thought to what was being done. He had many ideas to contribute, and especially enjoyed working in group situations. He was now working with his strengths and not his deficiencies, meeting success and approval, and was able to risk doing more.

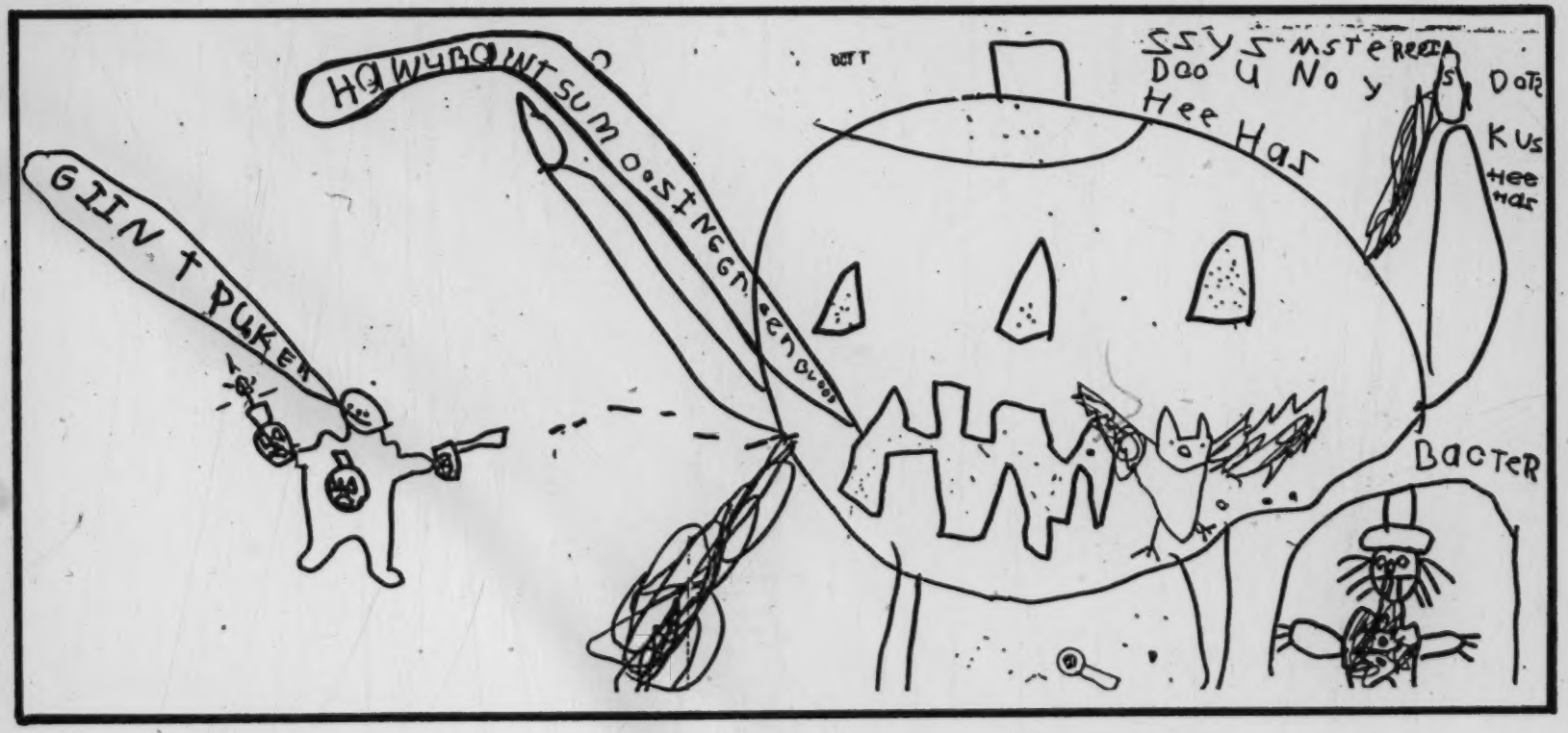
I had anticipated that our first discussion could become "messy and somewhat chaotic in its style and content, but reflecting the vitality of children's lives and ideas" (Gallas, 1995, p. 3). I knew, too, that it was essential for me to model questions, expectation

and standards; yet, it was essential that this would not in any way prescribe or limit the ideas the children might offer. "Achieving this goal requires much time, a commitment to placing the child's voice in the foreground of the [science] curriculum, and silence--on the teacher's part" (Gallas, 1995, p.40). But oh, it is often so difficult for the teacher to maintain the silence!

In finding the ability to take a less active part in the learning, my role changed from that of instructor to that of facilitator or guide. I must admit, I thoroughly enjoyed that. I could now build on what they students knew and had experienced. My teaching became more child-sensitive and was better able to accommodate individual differences. When I took the teaching role of "guide" rather than "director", my students were able to respond with a variety of ways to represent their learning.

I have always believed that there is much more to learning than just skills and knowledge. The Project Approach stresses the need to develop attitudes and dispositions. If our students are to be happy and successful, in their terms, not ours, then it is the dispositions and attitudes that will carry them through life.

The last aspect that especially pleased me was the development of the self-evaluative skills of the students. They no longer asked me if their work was well done. They now knew by themselves. In doing so, they became most adept at knowing what made the work acceptable. Their efforts adjusted accordingly. I hoped that my research would confirm and enlighten my findings and beliefs, and bring forward new ideas and aspects for me to consider.



Cartoon. (Giant Pumpkin? How about some oozing green blood? This is a mystery.

Do you know why? That's because he has bacteria.)

Representations for Phase Two. First prize ribbon. Counting the seeds. Diorama showing how pumpkins at the Weigh-off are weighed.

CHAPTER III

FRAMEWORK OF THE STUDY

Philosophical Framework

For me, the word research, elicited images of numbers and terms like standard deviation, median, mode and significant difference. In one of my early postgraduate classes, I was required to choose a research study and attempt to replicate it. At the time, my grade one class was involved in weekly Shared Learning sessions with the grade four class. Both the grade four teacher and I were very much interested in the concept of Paired Reading, and I was able to find a Master's thesis on the topic. So for eight weeks, we followed the procedures described in the thesis. Post-testing measures to compare to those administered before the Paired Reading program began did, in fact, indicate significant growth in reading comprehension and oral reading fluency. That should have been reason enough to celebrate but I felt somewhat betrayed. There was so much the numbers did not tell.

There was Tom, who already was reading at a late grade three level. How much more could one expect; that the numbers should increase? After all, he was only six years old. And all he wanted to read were issues of the National Geographic magazine. However, the most significant happening in his experience was having a group of grade four students come to me with the comment, "Tom and Brian (his grade four partner) are only looking at the pictures and just wasting time. Tom can't read National Geographic." Much to their amazement, Tom proceeded to read half a page of an article on dinosaurs and they were silenced.

Then too, there was Jody whose father had been badly injured in an accident at work. Home life was unsettled and hectic, but the Paired Reading sessions enabled him to achieve minimal grade one expectations, an accomplishment that would not otherwise have been reached. But the low scores that he received did not reflect this.

In fact, I could qualify the results obtained for every student in my class. The quantitative research methods used in the study did not demonstrate or explain any of this; it was only from my observations and knowledge of the students that I was allowed to gain a rich image of the overall picture.

Then my university studies introduced me to qualitative research. This would not immediately solve all my problems. But now I was aware of research approaches intended to discern, understand and more fully report on phenomena such as my students' growth in the Paired Reading study. Merriam (1998) writes:

> Having an interest in knowing more about the field and in improving the practice of education leads to asking researchable questions, some of which are best approached through a qualitative research design. In fact, I believe that research focused on discovery, insight, and understanding from the perspectives of those being studied offers the greatest promise of making significant contributions to the knowledge base and practice of education. (p. 1)

Creswell (1994) defines qualitative research as "an inquiry of understanding a social or human problem, based on a complex, holistic picture, formed with words, reporting detailed views of informants, and conducted in a natural setting" (p. 1-2). Because I am seeking an understanding of students' experiences with the Project

Approach, a qualitative research design as described here offered particular advantages for my study.

The characteristics of qualitative research as identified by Bogdan and Biklen (1982) include:

1. Qualitative research has the natural setting as the direct source of data. Although recording devices may be used, the researcher is the key instrument of data collection. He/she becomes involved in the study because of a concerned participation in the activity and process being studied.

2. Qualitative research is descriptive. Everything can have potential importance to the issue being studied.

3. Qualitative researchers are concerned with process rather than simply with outcomes or products.

4. Qualitative researchers tend to analyze their data inductively. Theory develops from the bottom up from the many pieces of interconnected evidence that have been collected.

5. Meaning is of essential concern. Qualitative research seeks to understand how participants make sense of their lives, how they interpret certain experiences, and how they structure their world. Descriptions of these are very rich and detailed. (p. 28-29)

Qualitative research methods are informed by the social sciences of hermeneutics and phenomenology. Being aware that hermeneutics and phenomenology inform the methods used alerts me to the notion that my research question can be explored from the hermeneutic and phenomenological standpoints. For instance, "What does it mean for the child to participate in the Project Approach?" From the phenomenological viewpoint, the

question to be studied can be "What is it like to experience the Project Approach from the children's perspectives?"

Now I am able to see why I felt my work with Paired Reading was somehow incomplete, and how I could overcome that obstacle in this study of the "engagement of children's minds". I had had a concerned involvement in Paired Reading but the measures used to demonstrate reading growth became the prime instruments of data collection. I had been concerned with outcomes. But now, in this study of students working with the Project Approach, I would be the prime instrument of data collection. Focus would be on "process rather than outcomes, in context rather than a single variable, and in discovery rather than hypothesis testing" (Merriam, 1998, p.35). I would observe students at work, interview some of them about specific aspects of their work, and write detailed descriptions of what I had seen and heard. This data collection would occur as the children worked in their natural setting.

Methodological Framework

The research I have undertaken can be understood as a case study. A case study enables a researcher to gain an in-depth understanding of a situation and the meaning that is created for its participants. Merriam (1998) believes that the "single most defining characteristic of case study research lies in delimiting the object of study, the case" (p. 27). This study will be limited to the students in the classes I am observing and by the time devoted to the Project Approach to learning and teaching.

Qualitative case studies can be further distinguished on the basis of overall intent or function (Merriam, 1998). This research will be interpretive. Information will be

collected to illustrate, support and challenge assumptions I have about the "engaging" of children's minds when they are working with the Project Approach.

When one thinks of the general design of a case study, it may be helpful to envision it as a form of narrative inquiry and as a series of loops in a spiral. The start of the study encompasses a wide area, a focus on an engaged concern. Each loop in the spiral "represents a different attempt to get closer to what you hope to understand. . . What is learned may in fact change the direction of the study quite dramatically" (Ellis, 1998, p.5). Researchers may discard, adapt or develop new ideas and plans. Each loop in the spiral can be thought of as data collection and interpretation. Findings will be generated--some expected and some not. "In hermeneutic terms, any unexpected dimensions that are revealed are called uncoverings. While the uncoverings may not lead directly to a solution, they will often enable the researcher to understand the problem or questions differently in order to reframe it usefully for planning the next step in the inquiry (Ellis, 1998, p.6).

Data analysis is a:

> Process that requires astute questioning, a relentless search for answers, active observation, and accurate recall. It is a process of piecing together data, of making the invisible obvious, of recognizing the significant from the insignificant, of linking seemingly unrelated facts logically, of fitting categories one with another, and of attributing consequences to antecedents. . . It is a creative process of organizing data so that the analytic scheme will appear obvious." (Morse, 1994, p. 25)

Four processes are involved in data analysis: comprehending, synthesizing, theorizing, and recontextualizing. They can be thought of as sequential but because they are parts of the loops in the spiral, there can be some spiraling back to check on understandings gained, and some spiraling forward as new insights are evidenced. With the collecting of data about the setting, the participants, and their learning, I will be able to describe the situation in detail. I can then look for emerging themes and the reasons for their emergence. Background reading will assist in this area. Theories can be verified or refuted in discussions with the participants or others knowledgeable about the Project Approach, and can then be recontextualized that is applied to new situations.

The role I assumed in this case study was that of participant observer. Although the staff, students and parents in the class which I was observing were aware of my role as researcher, I participated in the activities of the project, a study of The Playground, to maintain a supportive role in its development (Fraenkel & Wallen, 1990). This is referred to as an "active membership role" in which researchers are "able to gain closer, more personal, more accurate and more in-depth insight into the groups they are studying." (Adler & Adler, 1987, p. 66). By becoming actively involved in the project, I was able to gain specific insights and develop relationships with staff and students that might not otherwise have occurred (Borg, 1979).

An observer usually finds that perspectives change as more time is spent observing. "Through the course of these changing perspectives, the environment is also changed, becoming more interesting and compelling, and guiding the researcher's attention more clearly" (Boostrom, 1994, p.51). This would correspond to the spiraling forward on the loops in the research process (p. 27) described earlier. At the beginning of

my research on the "engagement of children's minds" in the Project Approach, I had difficulty focusing. I responded to all visual and oral stimuli that were presented. I did not qualify my observations in any way. Was I in the right place at the right time? Which was the "best" situation to observe? Was I gaining the correct understanding of what was said? Was I affecting the responses of the participants? (Gans, 1982). Little of significance was found during this time. I had responded much like a video camera (Boostrom, 1994). The next step in my research process would involve editing and fine-tuning the video.

The students soon became more than just a face or a name. They became vital members of the drama being enacted in their classroom. They had ideas, emotions, attitudes and dispositions with which I could empathize. I had become what Boostrom (1994) called a playgoer (p. 57).

Another role of an observer can be that of evaluator. Because the classroom in which I was observing often has students and guests dropping in, the students and teachers at no time indicated that they felt they were being evaluated. Billie remarks,

"You can ask me any questions you want. Know why? I'm used to having students here in this class." However, I did adopt an evaluative stance in my reflective journal. I often found myself comparing what was occurring in the Project Approach with what would commonly be found in the more traditional systematic instruction or in my classroom.

As an observer, I was very much interested in what the students had to say about the meaning they were constructing about their interest in their work with the Project Approach. I wanted to know, "What made it 'fun' to learn this way? Why did a student

choose to work on a specific topic? What features of the learning process were most interesting?" I was looking for what the participants had to say "about [their] aims, beliefs, sentiments and convictions" (Boostrom, 1994, p. 57). My perspective had become one of subjective inquirer.

As I observed the students at work in small groups or individually, I experienced several "Eureka!" or "Ah-hah!" moments. I could now see more clearly how the Project Approach "engaged the children's minds." I had become an observer as insider (Boostrom, 1994, p. 57). Once I had became an insider, I was able to become a reflective interpreter and recontextualize what I had seen and heard into possible new situations. As a participant observer in the Child Study Centre, I collected field notes, conducted interviews with individual students or groups of students, took photographs of the students at work, participated in their field trips and individual/small group investigations, viewed a videotape of their presentations, and collected or photocopied samples of their work.

The Context of My Observations

I carried out my role of participant observer in the Child Study Centre at the University of Alberta. A combined grade one-grade two class was involved in a project study on the Playground. The class consisted of 17 grade two students and 22 grade ones. In this class several students were designated as having special needs. A staff of two full-time teachers and two-and-a-half teacher partners overlooked the operation of the Centre. In my writings, I will refer to the adult who facilitates the work of a group as a teacher. The grade two teaching partner became my supervisor.

Ethics

At all times, the confidentiality of all the participants has been guaranteed through the use of pseudonyms. The informed consent of all parents was obtained before starting the study. The informed assent of the students was obtained, and they were informed that they were free to withdraw from the study without penalty at any time. This study occurred in the usual context of the ongoing activities of the class.

CHAPTER IV

MY OBSERVATIONS

The Peach Boy

When I first came into the Child Study Centre to observe, the classes were completing a unit of study on Japan. This was in response to the coverage in the media of the 1998 Winter Olympics. Because the students had little previous knowledge and experience with the topic, the Project Approach was only partially used. The Approach was used for the final segment of the unit study, the performance of a play called The Peach Boy. Groups of students were involved with the costuming, the retelling of the story, the preparation of the sound track, the preparation of a program, and the making of scenery to resemble Japanese walls. A very small group of students were involved with woodwork for the next project, on The Playground.

Two of the grade two students had chosen to prepare the program for the play. They had drawn a plan for a four-page feature. Now Cameron had gone to preview the play while Billie remained in the classroom to write a synopsis of the play. He sat at a table by himself, writing down his thoughts. To his right was another sheet of white paper, which contained a web to assist in the writing of the synopsis. I stopped to look at the web and Billie noticed this.

"Know why I have writing all over?" he asked me. (He means that the printing does not follow the lines of the paper). He did not stop to give me an opportunity to respond but continued, "Teachers said we can write all over when we make a web. I have to write this for the pamphlet for the play. So I make a web."

He paused briefly, looked at his writing--he had completed two paragraphs and was beginning the third--and then added, "I think this has to be edited and then go into the computer." He read aloud to me what he had written, as well as the sentence on which he was presently working. As he wrote each word, he spelled aloud. He looked at me for help with the word, "some". He had written "sa" as in "saw" but said, "I know it's not right." I told him he needed an "o" for the "a", and he completed the word correctly.

The sheet of paper had been filled so Billie explained to me, "I need to get another sheet of paper." He went to a side shelf to pick up another sheet and then returned to the table. He reread the last paragraph he had written. "Period!" he stated emphatically. "I need to make sure I put in the, the. . . "

The word had escaped him, so I offered, "punctuation?"

He nodded, "Yes. Grade two's have to be careful to do that." Billie looked up from his work at me and asked, "Do you know why I'm so well working when you're here?"

"Why?" I inquired.

"Because I'm used to having students around," he explained.

Billie continued writing the synopsis of the play. He had written "t" for the "ed" endings in "wished" and "washed" but seemed unsure of the spelling.

I reminded him, "Look carefully at the endings of those words (and I point to 'wisht' and 'washt')." Billie looked closely at the words but still was perplexed.

"What can you remember about the ending when it sounds like 't'?" I asked him.

"Oh, yeah! I need 'ed'." He quickly erased the "t's" and replaced them with "ed's". I interrupted his work to ask Billie why he chose to work on this part of the project.

"Well, Cameron would have been the only one working on the program, and that's a big responsibility for one. So I decided to help him," Billie explained.

"Do you like working on the computer?" I asked another question.

"Yeah, but if the secretary is in, we have to put it on a disk. Usually she's gone in the afternoon. But then we don't work on this [i.e. Projects] in the afternoon," Billie continued with his explanation.

I realized that progress on the synopsis had halted, so I apologized, "I'm sorry. I won't ask you any more questions so you can finish your work."

"That's okay. You can as me any questions you want," came the response.

"And you can ask me any questions you want," I replied.

"I won't have any. I'm too busy!" Billie replied confidentially. He left the table to check the date on the calendar and returned to date the pages of his work and continued with the synopsis.

"This is the really exciting part!" (Billie looked at me and then wrote "IN the peach was a boy!!!!) I guess I'm all done now. Cameron will be back any minute."

"He's going to be pleased with the job you've done," I told Billie.

He smiled in response and then replied, "I hope so. I'm just going to the office. I'll be right back." (He returned with the pages all stapled together. The stapler on the table was missing so he had to use the secretary's from the office.) Now Billie sat down at the table once again. "I've got to edit. I'll just do this myself." He proceeded in a very businesslike and confident manner.

Cameron returned to the classroom and met Billie at the table. A teacher joined them. Cameron had recorded many words to describe what he had seen. The teacher

asked Cameron what he liked about the play. She recorded what he said, read it back to him, and Cameron added more. They worked carefully on the wording but the teacher always deferred to Cameron and his choice of words. When the word, "outrageous" was mentioned, he reminded the teacher to use all capital letters and three exclamation marks. All the while, Billie watched and waited patiently for the time when he could share his work.

Cameron had written down, "OLD MAN - A GOOD ACTOR". He and the teacher discussed whether to include this comment. Cameron was thinking of omitting that comment to ensure the feelings of the other cast members would not be hurt. In the end, he decided to think more about it. It did get included in the final draft because the old man's acting carried the play.

Now the teacher reminded Cameron,

"Now you have to come up with an ending."

I interjected to mention what an impressive job Cameron had done.

"Is your Dad a reviewer of plays for a newspaper?" I questioned.

"No," and Cameron shook his head.

"The language you have used is not what I'd expect of a grade two student. Your language is much more specific and descriptive," I commented. At this time, the teacher explained that she and Cameron had discussed the role of a critic, the purpose of a review, and the language that might be included.

"Obviously, Cameron listened well. He's done a great job." I complimented him. Cameron pointed to his teacher and added,

"She'll tell you why."

The teacher looked puzzled and could offer no reply so Cameron shielded his mouth with his hand and whispered somewhat loudly,

"I've been here for four years."

At this point, Billie who had been sitting very quietly and listening to what Cameron and the teacher have had to say volunteered, "And I've been here for five." He continued speaking but returned to the program. "Very good, Cameron! I'll read you mine now." He read his synopsis. Cameron listened closely and suggested two changes. These were made.

"Good, Billie! Now we'll put it in the computer," Cameron added. Lunch time had arrived so work was put away until the next class.

The program had been typed, formatted and printed out on the computer during extra class time. Cameron and Billie outlined the illustrations with a black felt pen so that they would stand out. Previously, they had been completed in pencil. It was decided that the border from the first page be continued. As this was being done, Cameron commented, "We lost this on the computer twenty-eight times. I know, I counted them!" And he drew the "recycle" logo near the words, "PLEASE RECYCLE".

Billie suggested that tomorrow they could color in the letters that had been given double thicknesses. "It will take a long time."

The teacher brought them back to the task at hand, "First, we'll take this to Orlando to print."

But Billie persisted, "Teacher, will we be able to fold them this afternoon?"

To which the teacher responded, "Well, maybe this afternoon. We'll see how long it takes to get them printed. Remember with our Farmer's Market brochures, it took a long time." Both boys thought back.

"But he did a really good job! So the time was really worth it," commented Billie. "Can Cameron and I hand these out tomorrow?" The teacher responded affirmatively and Billie added, "My dad might even come tomorrow." The teacher got some money from the office, and she and the boys went out of the Centre to have the program pamphlets printed.

The next morning when I arrived at the Centre, Billie came to sit down beside me at a table.

"Good morning. How are the pamphlets?" I greeted him.

"They're almost done. We've only got to fold forty-five copies. Then we're done! Are you coming today?" (He is referring to the performance of The Peach Boy being held that afternoon.)

"Definitely!" I replied. "I'd like one of your pamphlets to keep," I said as I examined one of the finished products.

"You'd have to get one at the front when you come," Billie explained.

"I'll be there early then," I told him. Then I asked if he and Cameron were still planning to color in the words.

"Maybe Cameron will fold and I'll color. We'll see when he gets here," answered Billie. He then spotted a teacher from the Kindergarten class coming into the classroom and rushed over to her, "Your class is invited to a play this afternoon. Are you coming?"

"Is there an invitation?" she asked.

"I'll go get one. Actually it's a pamphlet. Me and Cameron did this all," Billie explained as he showed her the program.

"Very impressive!" praised the teacher as she examined it. Billie smiled in response.

Cameron came to the table.

"We have fifty-two of these to fold." There was no comment on the larger number of programs.

"We want it exactly flat," explained Billie.

"It doesn't have to be exact. You just have to match it a bit like this (he demonstrated) and then press," he corrected.

As they folded, Billie suggested that it would be a good idea to take the recycling bin to the site of the play to collect any programs that the audience might not want to keep.

"Would you help us?" Cameron asked me. "That would be faster." He handed me a pile of programs to fold.

As we folded I had the opportunity to ask Cameron why he chose to work on the program for the play.

"I thought it would be a fun thing to do, and actually it was! My name is in the cast," he said as he pointed it out to me.

I noticed there was an asterisk before each name in the cast, and asked what it is. "It's a bullet!" the boys shouted in unison.

"A bullet? What does that mean?" I asked.

"Kapowie!" explained Billie enthusiastically as he raised his hands above his head. "Each time we put in the bullet (*), we raised our arms and said, Kapowie!" Cameron joined in on this one and then added,

"It just means another character for the play."

Billie noticed that beside Cameron's name in the program were the words, "audio manager".

"What does an audio manager do?" he questioned.

"I turn on the tape recorder when it has to be on," explained Cameron.

"I'll help you whenever you need it," offered Billie.

"I don't think I'll have to. I'll be okay," responded Cameron.

Billie stopped for a moment and thought aloud, "If you're the audio manager, you're not cast--you're the stage crew."

Cameron replied, "Well, I'm on the list."

Billie persisted, "You're not actually an actor. You're stage crew."

Cameron raised his voice a bit and replied, "Well, Julie invited me to be audio manager and I accepted. So my name is on the list." That ended the discussion. The programs had all been folded now so both boys put them in baskets near the door so they could be easily picked up on the way to the performance.

That afternoon several parents and the rest of the class got to see the performance of The Peach Boy. Billie and Cameron handed out the programs and were acknowledged by the main character/announcer of the play.

I interviewed Billie and Cameron a few days later. "How do you feel about project work?" I wondered.

"It's fun!" volunteered Billie.

"It's interesting!" added Cameron.

"What makes it fun and interesting?" I wanted to know.

Cameron responded, "We get to go on the computer."

"That was really fun," interjected Billie.

Cameron continued, "We got to make kimonos and other neat stuff."

"Why did you choose to do the program?" I asked.

"We thought it could be like a good sing-a-long. I wanted to be a reporter and also it would be good to help the people in the play group," explained Cameron.

Billie echoed the comments with a simple, "Yeah, me, too!" And then he corrected his partner, "Cameron, not a reporter--a critic."

"Well, both, really," responded Cameron.

"Anyway, it was fun," offered Billie.

At this point I again interjected, "What do you mean by fun?"

Billie now took the lead, "I could work on the computer. I like working on it."

"You ran into some problems working on the computer. You couldn't find the data you had input. Was that frustrating?" I asked.

"That was exciting," Billie replied.

Cameron added, "We just called in the teacher and said, 'This computer got busted. Could you help us?'"

"Yeah," Billie added, "It was like an adventure."

At the time, I did not think to ask Billie to clarify this metaphor. So the next day I asked him about it.

He replied, "Well, you start on something and you run into a problem. You just don't quit. You try to work it out because one of your plans will fix that problem. And you keep on going."

When asked if they would choose to do the program again, both boys replied in the affirmative. Although they also both felt that they did not work well together, they liked working with partners.

"Why?" I asked. Cameron was first to respond.

"Because I can just say, 'Hey, partner! I need some help. Can you come over here?'"

"I can ask him for help, too," replied Billie.

"How did you feel when the program was finished?" I wanted to know.

"Re-liev-ed! The work was over. It took about two weeks," explained Billie.

My last question to Cameron and Billie was, "Were you proud of your work?"

To this, there was a most definite, "YES!"

In this example of the Project Approach at work in the classroom I was particularly impressed by the sense of caring for others and offering to help one another. Nel Noddings (1992) believes that the main goal of education is to encourage the development of caring in students and not to focus on achievement:

> To care and be cared for are fundamental needs. We all need to be cared for by other human beings. In infancy, or old age, the need is urgent and pervasive; we need care giving, and we need the special attitude of caring that accompanies the best care giving if we are to survive and be whole. But at every stage we need to

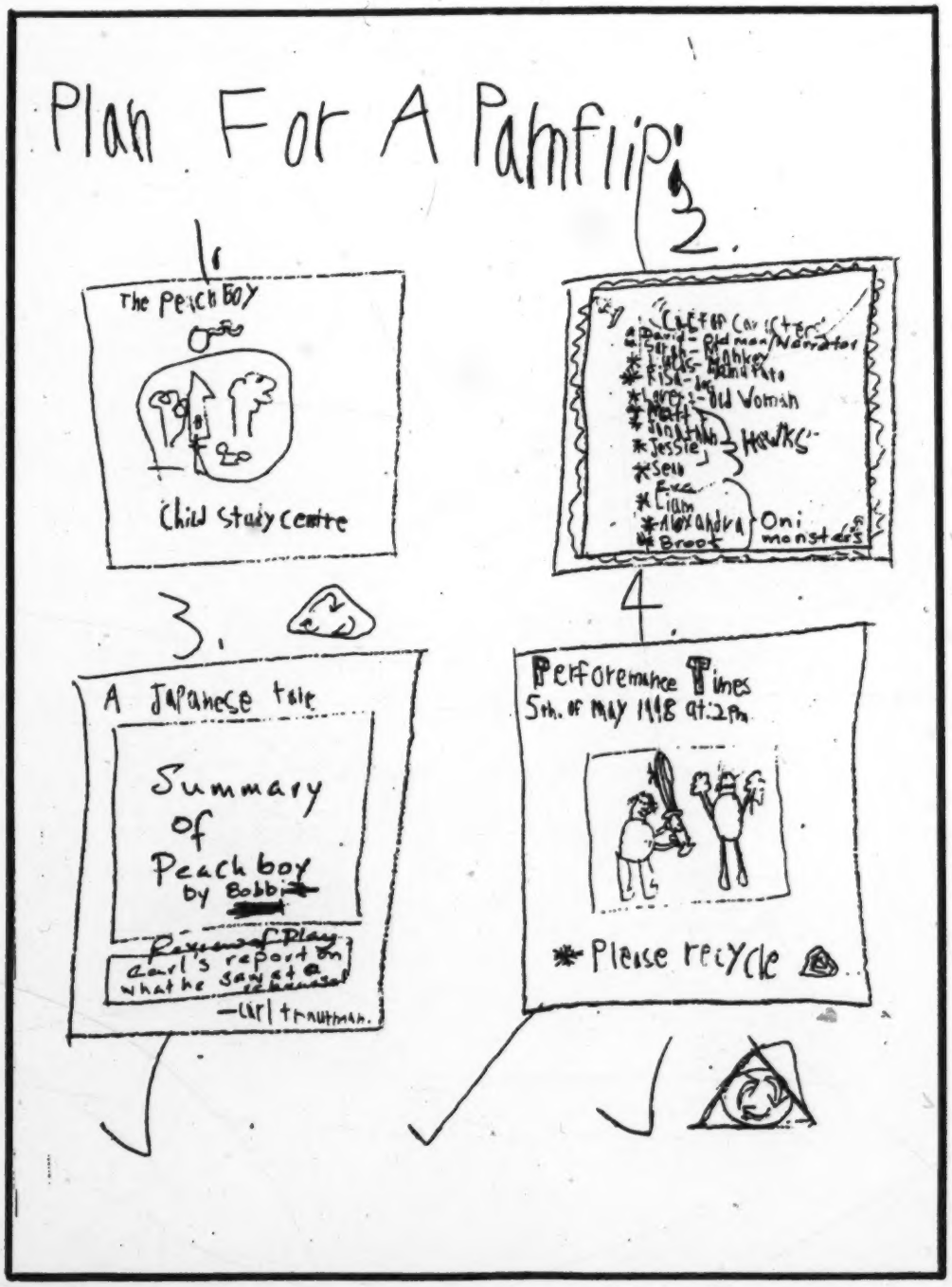
be cared for in the sense that we need to be understood, received, respected, recognized. (p. xi)

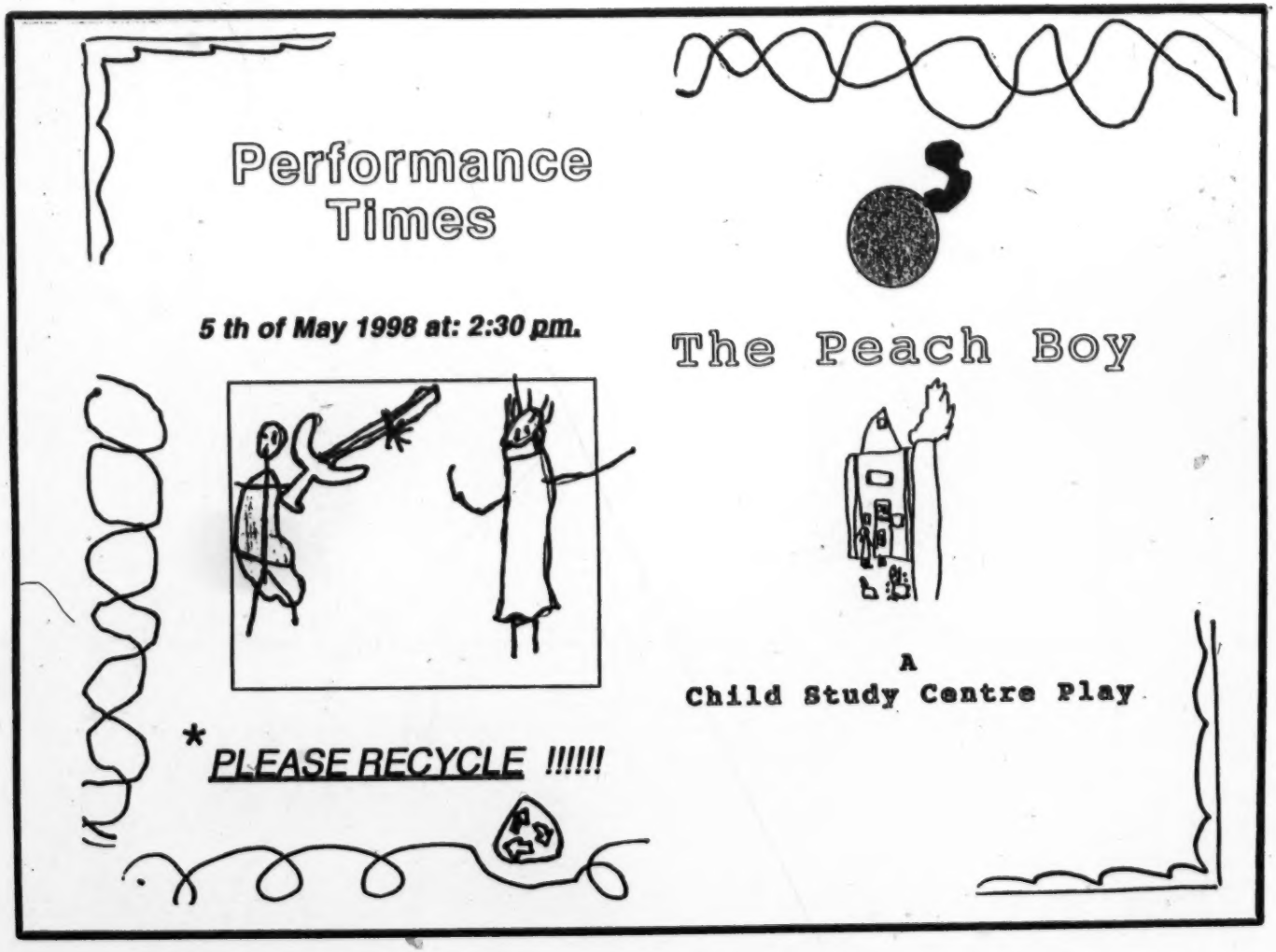
She continues to expound on the idea of caring by describing "Centres of caring: care for self, for intimate others, for associates and acquaintances, for distant others, for non human animals, for plants and the physical environment, for the human-made world of objects and instruments and for ideas" (Noddings, 1992, p.xiii). Cameron and Billie demonstrated care for themselves, care for their classmates, care for intimate others, care for associates--they responded favorably to my queries and observations--for the computer (an instrument), and for ideas (both past lessons taught and the ones expressed in the course of preparing the program).

Noddings (1992) also believes that caring is a two-way venture. "A failure on the part of either carer or cared-for blocks completion of caring" (p. 15). It is obvious that Cameron and Billie have been involved in several truly caring relationships to demonstrate the concern for others that they did. The Project Approach to teaching and learning reinforces this belief.

Katz and Chard (1989) define one of the learning goals as that of developing dispositions. "They are broadly defined as relatively enduring 'habits of mind' or characteristic ways of responding to experience across types of situations. . . " (p. 20-21) Children are most likely to learn dispositions from observation and emulation of models. The dispositions 'picked up' from others are shaped and strengthened by being appreciated and acknowledged or ignored (Katz, 1998). The Project Approach, because it deals with topics with which the students have had previous experience and because it allows for much choice on the parts of the students, makes this goal more easily achieved.

The plan for the pamphlet.





The pamphlet.

A JAPANESE TALE

Once,in Japan,there lived an old woman and an old man.

They had no Children they wished they had a child.

One day,the old man went to cut Bamboo and the old woman went to wash some clothes.

She wished and washed and wished and washed for a child.Then she took a rest. A big peach came floating down the river! and the old Woman scooped up the peach and took it home.

The old man cut the PEACH in half and they found a little boy inside!!!!

They were overjoyed!

Summary by *Bobbi Bolsek.*

Cast of Characters

**David.A - Old man /Narrator*
**Sarah.K - Monkey*
**Lucas.K - Mamatato*
**Lorena.M - Old woman*
**Risa.M - Dog*
**Matt.R*
**Jonathan .T Hawks*
**Jessie.L*
**Sean.B*
**Eva.K*
**Liam.O Oni Monsters*
**Alexandra.V*
**Brook.D*
**Carl.T - Audio Manager*

A special review of the best play ever!!!!!

this is an active play.I liked the way the characterss imitated the story they were hearing from the tape player. It is very funny!! OUTRAGEOUS!! The old man is great. From what I saw of the play Rehursal,it is totaly realistic. -Carl Trautman

CHAPTER V

THE PLAYGROUND PROJECT

Phase One

The students and staff became involved in the Playground Project because they all shared a common interest in the area outside their school site that was used for their time outside. The area had some features with interesting potential. But these features had not yet been maximized--the project planned to accomplish this.

The project was designed to be a continuous study. It will be carried on by the students again in the fall and added to as the needs and interests dictated.

Model Willow Furniture

Brian had completed his work on the unit, Japan, sooner than his classmates. Thus, he was given the opportunity to begin on something for the Playground Project earlier than the others. He was most interested in a willow table that one of his teachers had brought into class, and wanted to make a model of it and an accompanying chair that he could reproduce in life-size proportions for the school playground. When I began to observe in the Study Centre, Brian came to the woodworking centre with the model of the table. It looked complete to me, but he said he had more work to do.

"I need more wood and the cutters." He could not find the cutters so he asked one of the teachers. They went together to find them.

The cutters were found and the teacher returned with Brian to his chosen spot of work. They discussed what he would do. Then Brian moved off to one side to get some more willow twigs. He had used thin twigs for the table top and thicker ones for the legs.

But the legs were not very stable and the top twigs were coming unglued. He called out to the teacher who had stopped to assist another student.

"How are you going to stick it together?" she asked.

"With glue," replied Brian.

"You get the white glue and I'll get the glue gun," the teacher advised.

On their return, they moved all the component parts to an area near a plug-in. "What are you planning to do?" questioned the teacher.

"Did you use the glue gun yesterday?" she asked.

Brian nodded his head in reply. He cut a small piece from the willow twig and measured it to the table.

"What are you planning to do?" questioned the teacher once again.

"See, the legs are bent--they're not straight. The legs wobble. I'm going to use this piece (and he picks up a small twig) to stick on here on this leg like this table," he explained and pointed to the braced legs on a classroom table.

"Good! Often when we build furniture, it's good to look at other models so we know what to do," praised the teacher.

A classmate came along, paused to look at the construction, and inquired, "What are you doing, Brian?"

"I'm making it stable," was the reply.

The teacher instructed Brian about the use of the glue gun. He watched closely. Then he picked up the table and pushed on one leg until it straightened the way he wanted it to be. He picked up the small piece of twig which he had previously cut and positioned it.

The teacher applied the glue, positioned the brace, and they both held it until it was firmly in place.

"Are you going to put another one on this side?" the teacher asked.

"Yes," Brian responded quickly.

"Why don't you cut all the pieces you'll need and then come and get me so we can glue them all at once?" suggested the teacher. Brian returned to the cutting area in the woodworking centre to get scissors and a longer branch. He measured more pieces, and began to cut the first one. It broke off.

"Oh, man!" Brian reached for the clippers and cut another piece off the branch. He was very focused and felt the ends for smoothness. He picked up his model table and felt the glued brace. It was firm. He now applied glue to the ends of the piece of willow he had just cut--he held the twig very carefully and dabbed glue to its ends. Holding the table leg with his right hand, he attached the brace with his left. It came apart. Disappointment crossed his face as he peeled off the old glue.

"I guess it needs to get hotter," sighed Brian.

"No, it's ready," I replied as we tried it on a piece of paper.

"Then maybe we have to do it faster," offered Brian.

The teacher returned to check on Brian's progress and saw the broken leg. "Maybe we'd better re-glue the top pieces first."

"That will make the frame stronger," Brian replied.

The teacher glued the top pieces in again. Brian's head was bent right in, nothing distracted his attention. This was his table! Once the gluing had been completed, he flipped the table over.

"Put one brace in here," he directed. "I'll hold this." The rest of the braces were then glued into place. He set the table to rest carefully, upside down, beside himself.

After a few moments, Brian carefully turned the table over and gently set it down, right side up. Gingerly, he pressed down on it. It stood without wobbling! He was pleased with the results.

Now he picked up a sheet of paper and titled it, "Plan for a chair". He added the date.

"Why are you going to make a chair?" I asked

"I made the table, now I'll make a chair for it," he answered matter-of-factly. He stopped, thought, picked up the pencil once again and began to draw. He drew without hesitation, the drawings were very detailed, even showing where the nails would be hammered in.

The first diagram was marked TOP VIEW. Brian propped his chin on his left hand and continued to draw the SIDE VIEW. A third diagram was labelled FRONT VIEW.

"What other ways can we look at it?" he questioned me.

"You've got a top view, a side view and a front view already," I responded. "Maybe a back view?" I suggested.

"Well, the back and front can be the same," replied Brian. He now counted the number of pieces of wood needed for each view and then went to share his sketches with the teacher.

"Very good, Brian," she remarked on seeing his work. "How many pieces (she stops as she sees the numbers on the sheet)--you already know that. You can start cutting. Oh, but

Brian, there's only about fifteen minutes left until lunch. You might want to think about that."

"I'll work on this tomorrow." He cleaned up the area in which he had been working and placed his model table in the display case for safe keeping.

Surprisingly to me, Brian never returned to make the model chair and did not complete a life-size model of the table for the playground. But he did not abandon working with willow all together. He chose to work on the garden gates and the arbor instead. The choices were made by Brian alone; there was no external pressure to make these choices. Therein lies another strength of the Project Approach. The students are not "locked in" to activities. Yet, they know that there must be completed representations along the way. The students respond accordingly.

With Brian, I discussed his project work. When asked why he enjoyed this learning approach, he very emphatically stated,

"The computer's the best!" He continued, "I made a table and then I'll make a chair."

"Why did you choose to make that?" I wondered.

"I made the chair to go with the table. I felt like it. I chose to do it. It's fun," Brian responded.

"But what makes it fun?" I persisted.

"I like woodworking," was the reply.

"What makes you like it?" I asked.

"Because my dad always does it. He made a slide. I can work with him. I can do some myself."

Because Brian was able to make choices, he accepted the responsibility that accompanied the choosing. He was able to articulate those choices and the reasoning behind them. He did not hesitate for an answer. It was apparent that the choices made in this instance related to the interests Brian had, and his previous experiences with that type of work.

DeCharms (1976) suggests that people are driven (motivated) by an internal desire to feel in control. He uses the term, "Origin", (p. 4) to describe individuals who feel in control of their lives, the cause of their behavior. The "Pawn" (p. 4) feels much like the puppet that has all of its moves dictated by external controls. For a learning environment to promote a sense of personal causation, the teacher must be prepared to provide and encourage students to participate in situations that give control back to the student. Brian was definitely in control of his "project life" and its work.

When asked if he liked working alone or in a group, Brian replied, "I would sooner work alone."

Once again I asked, "Why?"

The reply somewhat startled me. "I don't have any friends."

A classmate volunteered, in disbelief, "You don't have any friends? I'm your friend!"

To this, Brian quietly replied, "Not really."

There was no additional response from the classmates, and the topic shifted to the benefits of working together.

To end the discussion, I asked Brian how he felt when his model table was finished.

"Good," he stated.

"You were planning to make a bigger model of the little one for outside on the playground?" I asked.

"No," was Brian's response. So now I know why the chair model was not completed.

When I inquired why not, Brian simply replied, "I didn't feel like it anymore."

Discussion of the Playground

One of the teachers addressed the class, "How many of you think you know what our playground looks like? What can we find in our playground?"

Students volunteered answers: the playhouse, the garden, the sand box, picnic tables, the plastic bubble, metal things to build with, the red and blue things to build forts.

The teacher interjected, "You mean the moveable pieces? What shape are they? How do you know?" These concepts were reviewed.

The answers kept coming: a nice big hill, rocks that you can sit on or you could jump from them onto another, trees, wood chips, the tarmac, climbing "stuff", skipping ropes, rocks around a bush that look like a campfire place in winter. Each answer was acknowledged and if further explanation or description was necessary, the teacher drew this out with direct questioning of the student. Although one student may have originally suggested the item, several others had other details to add or experiences with that item to share.

As the rate of answers had slowed down, the teacher re-addressed the group, "If I have this piece of paper to make the shape of the playground, what shape should I cut out?"

"Pentagon." "Oval." "L-shaped." "Almost like a diamond." The replies came very quickly. But when the word, 'diamond' was mentioned, the teacher asked how many sides it

had. The reply was four, so she continued to question, "So how is a diamond different from a square?"

One student replied, "It's a square turned on its point." The teacher cut out a square and turned it on its side. There was some disagreement. Rather than prolong this discussion, the teacher remarked, "We'll have to do more work on our shapes in our afternoon classes."

"Teachers can incorporate whatever they learn about their students' fears, loves, interests, talents, beliefs, experiences, aspirations or preoccupations into their practical reasoning about 'appropriate action' to take with students and in planning a curriculum" (Ellis, 1998, p. 57). This teacher had listened to the children's description of shapes and determined that more work was needed with them. She had used "practical judgement rather than [by] technical knowledge (knowing how) or scientific knowledge (knowing that)" (Ellis, 1998, p. 57) to plan the next math lesson. She understood the students' needs for more experience with shapes and responded to this awareness.

She continued, "If I give you this paper, could you cut out the shape of the playground? How many of you can draw all the things that are out there in our playground?"

"I could draw some of the things," one student replied.

The teacher encouraged, "Well, draw some of the things you think are on the playground. This will be our memory drawing. Then we'll go out and check what is there. We'll draw for about half an hour, and then go out and check. What do we call a view from the top?"

Once again several answers were volunteered, "Aerial view." "Top-down view." "Bird's eye view." "Worm's eye view."

Each answer was acknowledged with a nod of the teacher's head or a brief comment like "Good!" or "Yes!"

"If you make a top-down view, we can go up a few flights of stairs and look down." Before she let the students begin their work, she reminded them," Remember, our map of Japan--we added a legend."

Students nodded in assent. One of them suggested, "We could make a 'T' for a tree." To which a classmate added further explanation, "A capital 'T' for a tall tree."

The teacher queried, "Then how would you show a short tree?"

To which a student quickly responded, "Make the 'T' shorter."

The teacher now provided final instructions, "Now. . . go to the tables here and if you need, in the hallway. You can use pencils or crayons. We'll bring the paper. You might need scissors and glue. Cut out the shape of the playground and draw what you think is there."

The teacher had given the students the expectations of the assignment but had left the students to decide how they would complete it.

The students went to the tables to work. Three girls, Ellen, Allison, and Chloe chose to work as a small group at two desks that had been put together. All three thought the playground was rectangular in shape, yet each represented this shape in a different way. Ellen used one sheet of paper, Chloe taped four together, and Allison used two. Chloe and Ellen used pencils to draw and then pencil crayons to color. Allison used a thin-nibbed red pen for drawing and colored with pencil crayons. While Chloe and Allison began drawing items on the playground, Ellen worked on the legend for her diagram. Discussion of the strong weekend winds predominated as they work.

Another classmate stopped by Ellen momentarily. "How do you make a legend?"

"It's easy," she answered. "Look!" and she pointed to hers. He looked where she was pointing. "Oh, yeah," he recalled and off he went to his work place to resume his map.

Allison commented that she was finished with her playground. "Are you all finished?" she asked her work partners.

Chloe glanced at Allison's map. "Where are the wood chips?" she wanted to know.

"Oh yeah," commented Allison. She drew them in. Then she began to color them yellow and then grey over top that. "I'm making the exact color," she explained.

"The wood chips aren't yellow. They're grey," counselled Ellen.

"Well not exactly grey," replied Allison. "I used the yellow first to show the difference," she countered.

The girls overheard a classmate comment, "Dang!" This launched a discussion of "swears" and when they had used them. Much of this was done in whispers which only the three of them were privileged to hear. "When I was three, (then Allison whispers) . . . you don't know any better when you're only three."

As they talked, Allison noticed the flowers on Chloe's map.

"Nice flowers. I'll have to add some to my map," she commented.

Ellen was still pondering their discussion of swear words. "I wonder why those swear words are meant to be swear words?" she commented aloud. The discussion resorted to whispering once again. There was some laughter as well.

Lance had brought his work to show to the teacher who was sitting nearby the desks the girls occupied. "Tell me what you've drawn," she told him.

Lance pointed to a feature of his map and explained, "These are two big logs."

Ellen had overheard this. "Logs. . . I forgot those logs. I have to put them in my legend." She did so.

An announcement of "Snack time!" was sung out by a student as he skipped into the room and back out again. Allison sped up her coloring so she could complete a bit more before snack time. Chloe, whose map was four pages long, had moved to another table where she would have more space to work. But because she was now too far removed from her partners, she repositioned herself on the floor near the table where Allison and Ellen had stayed to work. She asked, "Allison, is there anything I'm missing?" (The two of them discussed Chloe's map and she then added some flowers and the wood chips.)

Then Allison looked at her map. "The kids are invisible in my map. That's why it looks like the shovel is digging by itself." She pointed to the shovel and the hole on her map.

The teacher had overheard this remark, "Can't you draw children in a map?"

Allison replied with a very definite, "No!"

"Why not?" the teacher wanted to know.

Allison shrugged her shoulders and stopped to think. But no reply was forthcoming.

The teacher let the question rest with Allison and asked the students to regroup. "Could you please bring your maps and sit down here? We'll discuss them."

The first student to arrive at the site for the regrouping informed the teacher, "I want to share this." She held up her map.

"Why?" asked the teacher.

"It's interesting," was the response. The rest of the group came in and sat down, putting their maps down on the floor in front of themselves as the teacher had suggested.

The student described a secret hiding place where "there's a blower-up". Discussion amongst her classmates identified the location and the fact that what she had described was a vent.

The teacher asked, "Where is north on a map?" The directions on a map were reviewed and shown on the girl's map.

Nathan held up his map, "I have a very tiny map."

"We're going to have to look and listen carefully," the teacher cautioned. "Here's the hill," she continued. "I've discussed an elevation map with him and he has incorporated that in his map."

Nathan then pointed to another item on his map. "This is the plastic play thing. See, I made all the openings in it."

"I know you've spent lots of time playing here because you know the number of openings. I don't. We'll check when we're outside," the teacher replied.

The teacher selected Cody's map. "Cody has included a compass rose on his map." The teacher and the students checked for the four directions and their positioning on the rose. They were all positioned correctly. However, they realized as they began examining the map, that it had been turned sideways. "How could this be changed?" the teacher asked. Several ideas were offered but no one, not even the teacher, told Nathan which he should use. That choice was his. He knew correction was needed, but how that would be accomplished would be up to him.

Now the students would be going outside to check the accuracy of their drawings. "You're going to need a clip board when we go outside. On the backside of your map, draw what you really see," the teacher instructed.

"It's going to be hard," suggested Adam.

"No, it's easier because we can see it, we don't have to remember it," countered Nathan.

"But it'll be harder because we'll see everything now!" explained Adam.

The students went out onto the playground to begin drawing what they actually saw out there. However, it would soon be lunch time so the time allotted to this task was quite short.

As had occurred in my discussion with my initial project on Pumpkins, I was impressed with the manner in which the students carried out the discussion. They listened thoughtfully and were able to add to initial comments. Everyone had something to contribute. Of course, this all took time, but the teacher recognized the need for being unhurried and sat back quietly to let the exchange flow freely. While she listened, she made mental notes of any misconceptions or ideas that needed refinement (e.g. shapes). She interjected only when she felt further explanation or review was needed. The teacher adopted the role of facilitator and guide.

Being able to work in groups and collaborate with classmates enabled the students to complete work in much detail and to overcome any questions/doubts they had. They had been given a space where they could "engage both what they know and what they can think, dream, or imagine. . . children can explore their own ideas using models of expression and production that appeal to and satisfy them" (Ellis, 1998, p. 66). They were able to discuss topics other than the one designated, for example, the girls' concerns with "swear" words. They were able to articulate their ideas about those kinds of words. They had a very good question to address--what makes words "swears". There was the need to discuss this in a

situation where they felt at ease and non-threatened. The Project Approach had provided this for them.

There was also no adult intervention to de-emphasize the seriousness of their concerns. These so-called "off topic" ideas are so often overlooked in classroom settings. However, being given the opportunity to work these concerns through can be such an enriching experience. The students gain an understanding of the world around them because of their common concerns for an issue and are able to develop the language necessary to discuss these concerns.

Block Representations

Some Project work had been done during a period of two weeks when I was unable to observe in the Child Study Centre. When I returned, the classes had been divided into five groups and each one was given an adult facilitator. The group I "shadowed" today was the one involved in the block area. The students had completed their memory drawings of the playground as well as the observational ones, and were now constructing structures that they would like to include in the present playground plan. The teacher refocused everyone's attention today by asking if they had noticed the blocks that had been taped together.

Lance explained, "I was building. . . planning a tree house."

The teacher recapped another representation, "These girls were planning a garden. Where in the playground do you think the garden would grow? If this is the playground (she gestures the area with her hands), where would you put the garden?" The girls working on this regroup, chose the area in which to set up the garden, and began rearranging the furniture to free up that space.

Next the work of Chloe and Allison was acknowledged, "You were working to construct the playground as it now is." Off they went to reset what they had previously put into place, and to add to it further.

Lance again announced, "I am building a tree fort."

The teacher glanced at the drawing beside him. "Lance has a design. We'll have to check if it will work."

Billie suggested, "Hey, Lance, let's make a drawbridge for your fort."

But Lance was not quite willing to share his idea. "No, this is mine. You make your own." (He moved away from Billie and Brad).

Brad had already started to build another structure. Billie picked up some rectangular blocks and again suggested, "Brad, I'll work on the drawbridge." Brad showed agreement with a nod of his head.

The teacher addressed the group, "I'll let you build until eleven o'clock and then you'll have until lunch time to draw your plans."

Chloe and Allison had recreated the hill in the playground using the curved blocks.

Emily was creating flowers with blocks and taped on paper details. "Do we make the garden like it is right now?" she asked the teacher.

"You could, or you could make it like you think it should be," replied the teacher.

Emily did not respond; she returned to the garden area and outlined its perimeter with thin rectangular blocks.

Back to the fort builders! Billie asked the teacher, "Do you know what this is for? It's a rain shelter. We can put our lunch kits there."

"You mean when it is raining and we eat our lunch outside," the teacher asked to clarify what he had said.

"No, what I mean is when we have lunch outside, in the fort," explained Billie.

Without any fanfare or dispute, Lance had moved over and had now joined Billie and Brad. They accepted him without any hesitation and they all worked together. Lance asked his partners, "How are we going to get up there?" He pointed to the topmost portion of the structure.

Billie casually replied, "A ladder or stairs."

Lance offered, "Okay. I'll make some stairs."

"For the grade ones," Billie suggested, "They maybe can't climb ladders."

"Or you?" stated Lance, in reference to Billie's handicap.

"Maybe we should have a ramp?" suggested Brad.

The teacher had come over to check on the progress of the fort.

"Are you boys thinking of a permanent structure or one that you can take apart after a week or so?" There was no reply from the boys.

"Let me know after," the teacher commented. "Think of the outside space we have and what you're designing."

Billie looked up at the teacher and thoughtfully questioned, "How long is the Centre going to be here?"

"Three or four years," was the reply. She explained the Centre's future plans to the boys. "We don't want to be in the basement all the time--we'd like to have a place with windows."

"Well, the basement isn't all bad. At least it's cool," countered Billie.

Brad began to cover over the roof of the fort with flat, rectangular blocks. Billie suggested this made the fort look like a Japanese house. Emily overheard this remark and came by to investigate,

"They're not really going to build this house. . . It's too complicated and it takes a long time."

"Yes, we can," argued Lance.

The teacher heard the exchange and came over to ask, "What makes you say 'yes'?"

"My dad has lots of wood."

The teacher continued to question, "Where do you think this structure can go?"

Lance quickly replied. "On the side of the hill."

"But we can't do anything with the hill. The sprinklers are there," the teacher explained to show why this location might not be appropriate.

"What are sprinklers?" Lance asked. The teacher explained.

"Then. . . past the hill," offered Lance.

"You mean on the bottom of the hill, going to the cafeteria?" continued the teacher.

Brad interrupted, "Guys, maybe we should cut this down." (i.e. make the structure shorter).

The teacher left the group to ponder this and went to talk to Emily. "What are your ideas about the garden?" she wanted to know.

"I need plants," said Emily. "They attract bugs."

"What kinds of insects?" the teacher queried.

"Like flies and bees."

"What kinds of plants do bees like?" asked the teacher.

"Those with pollen," answered Emily.

"And nectar," added the teacher.

Emily put down some pieces of white paper. "These are sunflowers," she explained. The teacher then tells her of a "sunflower house" that a friend had created with tall sunflowers. Emily's eyes lit up as she listened intently. She took tall dowel blocks and smaller half-circle blocks to create her own "sunflower house" in the garden area. She added chairs and small tables inside it.

Snack time was announced.

"I will not take a break. I like building with blocks," stated Brad.

"I like building with blocks, too." said Lance. "But I need a break," and off he went.

"Why do you like building with blocks, Brad?" I then asked.

"Well, I can make things--things I want to make," he responded.

"What kinds of things," I asked.

"Well, things that are really there and I can copy them. Or things that I make up all by myself. Like this fort. It's not really in the playground, but we could maybe build one like it."

"This fort is certainly getting bigger and bigger," I commented.

"And the teacher is getting scareder and scareder," laughed Billie.

"Why?" I asked him.

"There won't be room for it in the playground," said Billie.

It was now eleven o'clock. The teacher returned to the group. "I am going to give you some paper and have you draw a map of what you have designed. You can work in

partners. Put the date on your sheet. It can be just a pencil sketch. Put in as many details as you can."

"Do I draw our structure?" asked Brad.

"Make a map of the playground and show where your structure goes," the teacher explained. She glanced at the back of the area, spotted Emily's representation and commented, "I love that idea (the "sunflower house"). Don't lose it!"

Allison and Chloe worked together to make one map. They drew with felt pens. There was no hesitation, the drawing seemed to simply flow. "Oh no, we need more paper," was the only comment uttered by Allison. Chloe got another sheet of paper, taped it in place, and their work was quickly resumed.

Angela and Rosemarie had been making flowers and animals from Playdoh and paper for Emily's garden. She gave the "orders" of what was needed. They erased a great deal and make little headway for the first while. Perhaps this occurred because they have been in a "Pawn" situation. (See DeCharms Pawn/Origin theory, page 53).

Brad had provided incredible detail in his drawing. He examined the structure he had helped build very closely in one area and then drew that on his sheet. He then continued to another area of the structure.

The students came to their teacher to show and discuss their maps or plans. Billie was first. He described what he was drawing.

"What's this," asked the teacher.

"That's the gate," Billie replied.

"Well, how will I know if you don't label it. Remember--label the pathway, the gate, the door, everything you draw," the teacher advised.

Angela and Rosemarie brought up their map. They were trying to draw a side view map.

The teacher reviewed this perspective with them, "To help you, remember that the closest things to you are biggest and then they get smaller, smaller as you get further away. That's just an idea. You can try it." They returned to their work area, more eager.

Sherri had drawn her map to show what can be seen from the door. It was a new perspective so this was shared with the class.

"What you can do to help us understand this map is to put on the directions," the teacher suggested.

"Which way is North?" Sherri was unsure so Allison was asked to help her. Allison was also confused by this map's perspective and was quickly becoming quite agitated, so the teacher provided assistance.

The representations were collected by the teacher as it was lunch time.

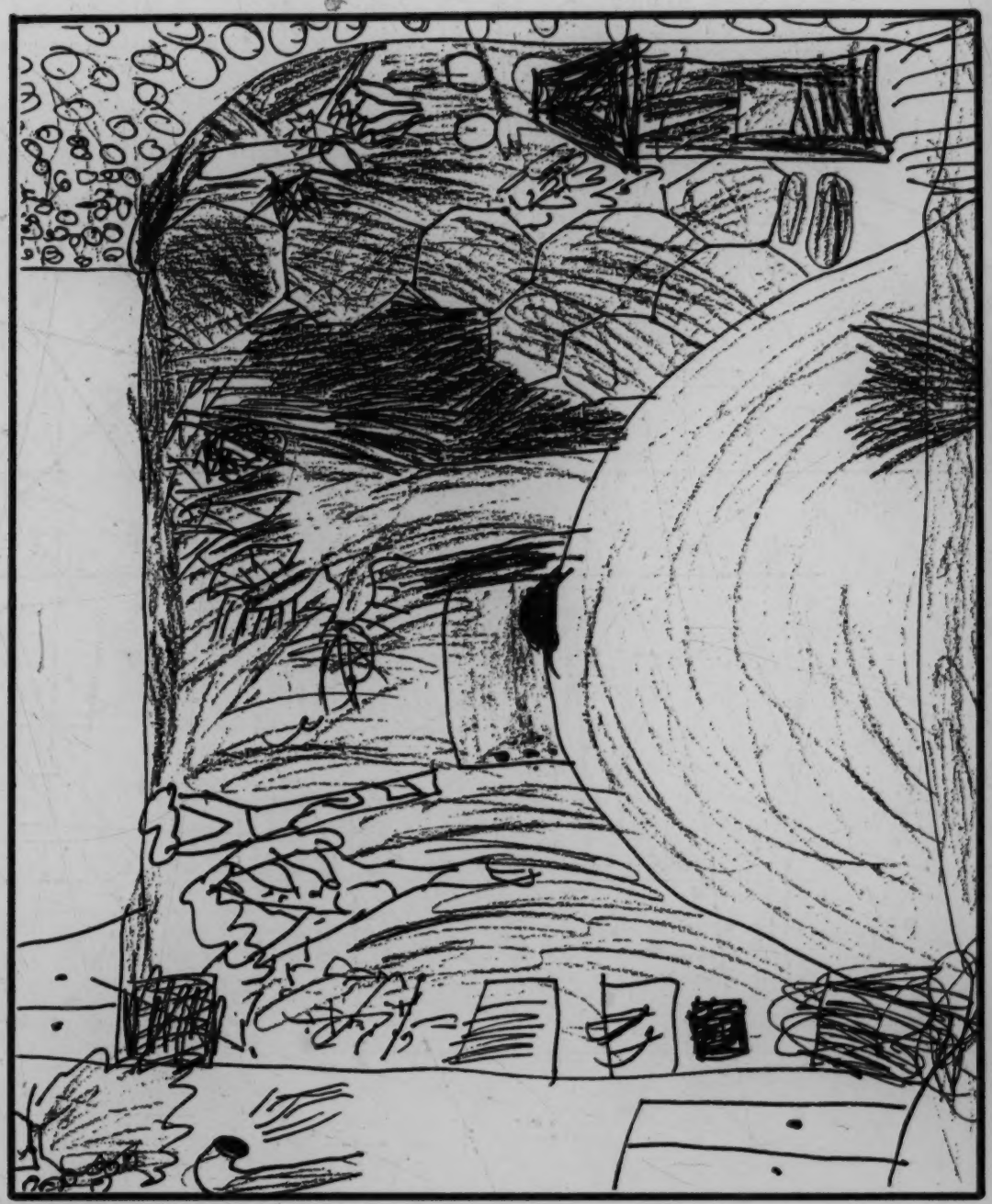
At all times, the teacher had let the students assume control and responsibility. At all times, the students had been hard at work. Brophy (1983) addressed the role of motivation from the point of view of socialization agents, namely the teachers. Teachers must ensure that the tasks the students choose are appropriate to the students. Then they encourage and assist with the completion of those tasks so that value of work is fostered and the students "enjoy actual processes of learning, recognize and appreciate advances in knowledge and skill, and take pride in craftsmanship" (p. 214).

Freinet (1993) uses the term "work-play" to show that activity can be "work and hard effort on the one hand, and pleasant thought and enjoyment on the other" (p. 195). Children who are engaged in work-play are "constantly encouraged by their need to know,

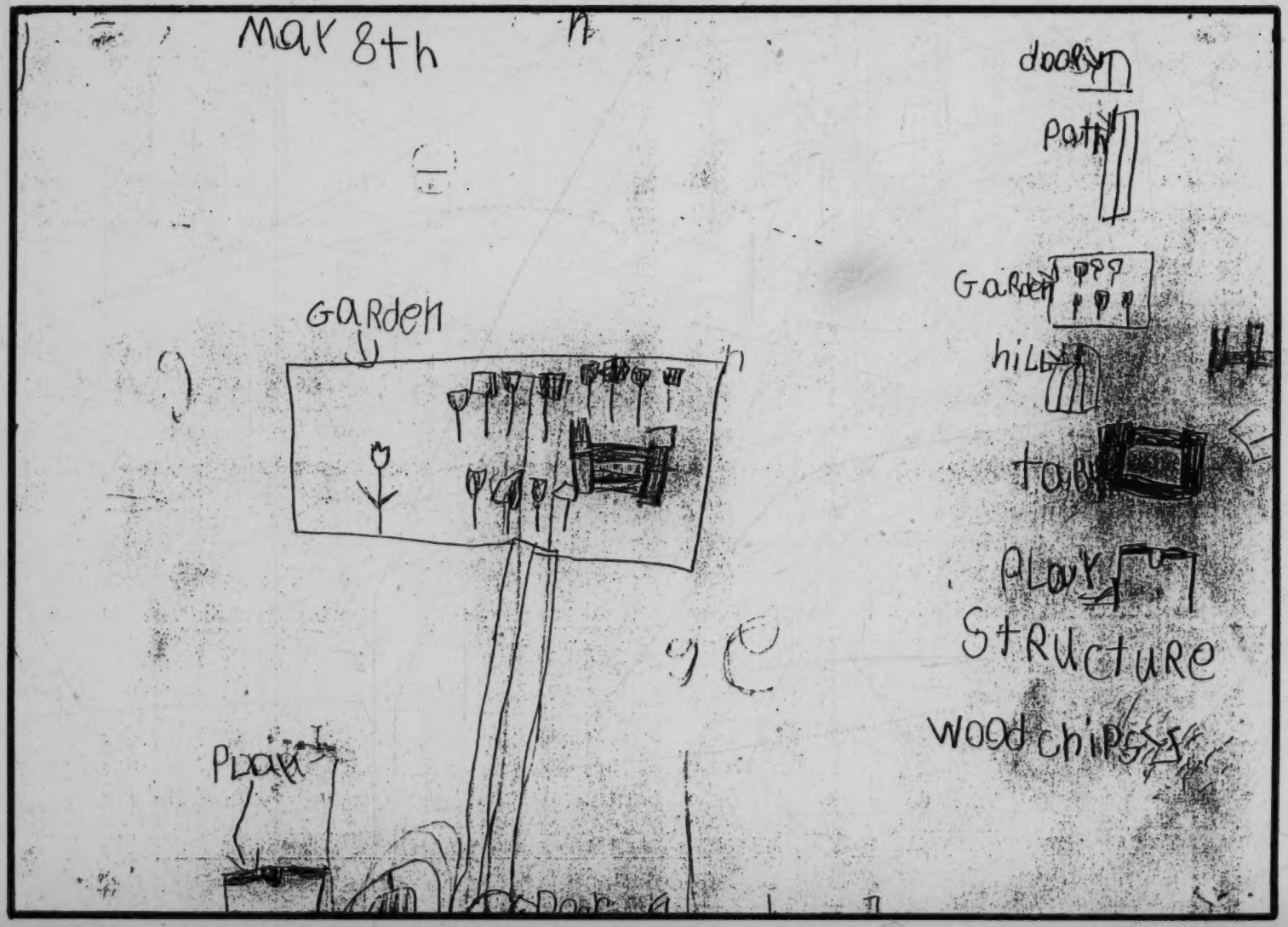
by their desire to experience, to compare and to control, and also by their inclination to produce things themselves through creativity and action" (p. 362). These ideas would seem to complement Brad's explanation of why he liked working with blocks,

"Well, I can make things—things I want to make. . . things that are really there and I can copy them. Or things that I make up all by myself. Like this fort. It's not really in the playground, but we could maybe build one like it." It could also explain why the students are so focused on their tasks.

Samples of maps drawn by students.



door
Pavement
wood chips
flowrs
tree
gate
house
tree
house
door
gate


Mar 8th
GARDEN
PLANT
door
path
Garden
hill
table
PLAY
STRUCTURE
wood chips

Creating the Web

The students all met in one group in the block area. The teacher asked, "What is webbing?"

Don is somewhat unsure so he replied in a questioning way, "Brainstorming?"

The teacher nodded approval and inquired, "What are some ideas we want to bring back to the group?"

Another teacher pointed to the site where the web would be created on the bulletin board and read out the headings: construction, garden, animal homes, dramatic play, equipment, and tools.

"What's equipment?" the teacher asked.

"It's bigger and used to play with," came one answer.

"Then, what's the difference between equipment and tools?" asked another teacher.

"Tools are used to build. Equipment is what we use," explained one of the students.

Rhonda offered this comment, "When we work in the block area, we have to think about safety." She was rather hesitant and not sure of what to say.

One of the teachers picked this up, and paraphrased for her, "We [our group] talked about building the CN Tower--would it be safe?"

Now Rhonda became more animated, "We could build a model with clay but not with the real materials they used for the Tower."

Another teacher picked up on this and added, "Our group also mentioned we have to think about who will be using the playground." The other group leaders (teachers and aides) mentioned the topics their groups had considered.

Then the task to be completed was given, "We'll work until 11:00. In that time do some brainstorming of ideas to fit on our web. At. 11:00 we'll regroup and work on our web."

The groups and their leaders scattered throughout the Learning Centre. One group remained in the block area. The teacher bent down to sit on the floor with the students. "How about I come down to your level?" she asked. She continued by asking the students what they did the last time they had projects.

Rosemarie responded first, "We used blocks to make what we wanted in the playground. We worked on the garden."

"Lance, what did you do?" the teacher asked.

Lance replied, "We made a fort that we'd like to have in the playground."

"Now, think of the kinds of questions you'd like to do research on. In projects, we have to choose a question or topic that we can research. What is researching?" asked the teacher.

"Looking at books, webbing, going to the library for books," explained Billie.

"What else is really important in research work?" the teacher asked. No reply was forthcoming, so she led with, "Interviews with. . . "

"People!" Billie enthusiastically supplied.

"Yes, with experts. We need to talk with people who know a lot about a certain topic." The teacher sensed a growing restlessness.

The students were anxious to rebuild the structures they had built yesterday. The boys working with the fort had an extra helper today in a visiting student. Brad began setting up the outer walls and maze.

The new group member volunteered, "I know what you could do. Take out some of the walls and make a gate."

"But we already have lots of gates," protested Brad.

"Oh, I forgot!" Lance hurried to the block cupboard and picked up three specially-shaped blocks that fit together for an elaborate gate. As he placed them, he commented, "We had this gate here."

The girls working on the garden "outlined" its perimeter with flat rectangles and began repositioning the flowers.

Chloe and Allison recreated the hill. "This time we have to make it solid and fill it in," said Allison. They chose blocks shaped in semi-circles of varying sizes.

Back at the fort, Billie was very excited. He suggested they make a secret passage in the fort, and show its location. The other group members enthusiastically picked up on that idea.

When the groups had completed their recreations, the teacher made a quick sketch of each group's work. The students cleaned up the blocks, went for their snack and returned to their work area to work on the web.

The teacher handed out post-it notes, "Look at the board and use the headings for ideas. Write down your ideas and put them down in front of you. You can have about five minutes to do this."

"When do we start," asked Allsion eagerly.

"You want to start now?" asked the teacher. "Go for it!"

The students began jotting down their ideas. Heads bent down over the notes. Where spelling of the words might be a problem, diagrams were drawn. The teacher helped

keep the ideas flowing by refining and reflecting back the students' ideas as they were volunteered. But at the same time, she recorded her ideas.

"Once you've made all the notes with your ideas on them, see if you can group all your ideas. For example, with my post-it notes, all the ideas here are about the garden," and she held them up, each one stuck to the bottom of the note above it. "And these are all about animal homes," she stated as she held up another row of notes. The students eagerly grouped their ideas.

All the groups briefly came together before the bulletin board web just before the lunch break. Billie was asked to share his ideas. He did so, and stuck the post-it notes onto the web. Ivan followed and then came Stephen.

With one of his ideas, he commented, "Bees steal honey."

"They don't steal--they take nectar," argued Cory. This began a discussion of "steal" and "take". There was general agreement that "if you take, you ask beforehand."

Another student responded, "But bees can't talk."

"Yes, they can. Just like dogs bark," answered one of his classmates.

A teacher interjected, "Do bees talk?" Some students responded in the affirmative, others in the negative. "We'll have to find out," she told the students.

Rosemarie came to place her ideas on the web. One of her notes stated, "caterpillar home". This promoted discussion of "are caterpillars good or bad?" There was no consensus once again. Another of Rosemarie's ideas was "butterfly home".

A student replied, somewhat in disbelief, "Butterflies don't have homes!"

One of the teachers echoed this comment in a question, "Do butterflies have homes?" She pulled out the book, Where Does the Butterfly Go When It Rains? and read it to the students. They were left to ponder the question until tomorrow.

The following morning, the students continued placing post-it notes on the web. Ellen introduced equipment for winter play.

The teacher noticed this and interjected, "Good! She's thought about another season. The items we've put up have mainly been for summer."

Ellen continued with "walking chain". She was asked to explain what it is. She did so and mentioned where she had seen one.

"Would you or your parents be able to take a photograph of that and bring it to class to show all of us what it looks like?" Ellen nodded her head.

The she read, "Hill. . . I don't know why I wrote that--we already have a hill." The students are continually self-evaluating, which demonstrates that they were indeed focused on their work. This is a definite strength of the Project Approach. More commonly, students seek approval or correction from the teacher.

Cory had a puzzled look on his face as he raised this question, "We've got so many things that if we do all of this now, there won't be anything we can construct when we go out to play later."

One of the teachers picked up on this idea. "We'll have to look at our space and see what we can include." She did not discourage any specific suggestion the students had made. She had mentioned something to be considered--the final choice for the inclusion of specific items was left to the students.

Another teacher added, "We'll also have to think about how much everything costs. We cannot afford everything."

Rhonda was the next student to share her post-it notes.

The first one she read was, "Soccer field." She immediately refined that suggestion to, "A mini soccer field. We don't have room for a real one."

Among her other suggestions Rhonda mentioned, "A wild area." Comments of "A what?" greeted this. So Rhonda went on to explain, "A place where we can sit quietly and watch animals and sketch them and learn about them. There could be a fence around it so they can come in and feel safe."

A teacher then asked, "Where, on the web, would you put this?"

"Over in the Garden section with Animal Homes," she replied. The post-it note was attached in the appropriate place and she finished sharing the rest of her ideas.

Morgan offered, "We could build an arbor." One of the teachers told the students about the one she was building in her garden.

Perhaps Ellen was just echoing Cory's suggestion but after closely looking at the growing web, she commented, "We have so many things--how can we do all of them? Where will we put them all?"

To this, a teacher responded, "Perhaps we'll need to do a survey in response to Ellen's concerns. We need to know what we already have on our playground and even make a model of the playground so we know what is there and where we can put new things."

Designing Research Questions

The classes broke into their smaller groups to discuss individual choices. The group I observed settled on the floor in the block area. The teacher brought out a calendar to explain the timing of the project.

Then she asked, "What does researching mean?"

The group volunteered, "Using resources", "Field visits," "Going to the library", "Photographs of playgrounds you know".

"Those are all good suggestions," the teacher replied. We're all going to have to do some research about one of these topics. We need to remember to be practical--there is only a short time. We can work on these next year."

The students gave the teacher their first and second choices of topics they would like to research. They, then, were asked to think about and propose possible research questions for their main topic of interest. Allison and Billie went off on their own to work, but the rest of the group gathered around the teacher for further clarification and explanation.

Allison wrote down four questions about gardens, "What kind of plants do you eat? Where do butterflys sleep? Why are bees importent? Why do worms make thier tunnls undergrownd? Why do butterflys take so much polen?"

I asked Allison why she had chosen the garden as her main interest to be researched. "Well, I help my mom with our gardens. We have one in the front yard and one in the back yard," she answered.

Thinking that their yard was set up like most gardens, I questioned, "Do you have a flower garden in the front yard and a vegetable garden in the back?"

"No, they're both flower gardens. Actually the front garden stretches all around the house except for one side. Here we have lilac bushes--they're just starting to bloom now," she explained.

"What are your favorite flowers?" I wanted to know.

"Well, I like roses, but lilies are my favorites." she told me.

"What is it about the lilies that makes them your favorites," I asked.

"They come in many pretty colors, they bloom early, and I like the shape of their flowers!" I was impressed with Allison's knowledge of flowers. It only made sense to build on this knowledge and her experiences with them thus far. The interest and motivation were already there. According to self-determining principles described by De Charms (see page 53), Allison was already in an "Orgin" situation.

Billie was most interested in playground equipment, specifically the slides. His questions include, "What is safe? What cawd off slads? How many can go down slads? How much mony are slads? Where do you get the money?" He also designed a sheet on which to record the names of experts and their specialties. He had already filled in three: the man who spoke to the classes on wasps earlier, the expert on playgrounds who would be coming into the classroom, and his dad who is a carpenter. Billie was in definite control of his learning.

Brian was interested in animals that might come to the playground, mainly the rabbits and squirrels. He had seen a squirrel in one of the trees in the playground and a rabbit hopping around Campus. He wrote, "I know that Rabbits change coLoR in winteR and change back in sPRing. But how? do Rabbits and squiRRels hibeRnate? What do squiRRel and Rabbit babYs look Like?" The first question was especially profound for a

grade two student. I was also interested in the mix of capital and small letters in his printing. And I was especially impressed with the accuracy of his spelling.

Morgan was also most interested in the animals he had seen in and around the playground--the squirrels and rabbits. But he recorded his questions in the form of a "quiz". "Who chag colrs? Who cims chees and fiss? Who Dot hiarnt? Who his son cos?" [Who changes colors? Who climbs trees and flies? Who doesn't hibernate? Who has one coat?]

Morgan's spelling was inaccurate. But he did not struggle nor balk at recording his questions; he wrote as he thought. Stipek (1989) states that teachers need to ensure that students "do believe they can achieve, that they experience a sense of personal responsibility and pride in their accomplishments, and develop an incremental concept of ability" (p. 120). Morgan knew that he could read his questions to his teachers and that they would know what he wanted to research. Because of this, he was not concerned with the correct spelling—most important here were his ideas.

Researching the Questions

With Project time the next day, the students gathered in one group in front of the web. The teachers had previously met and recorded the students' choices for research according to the main topics and to how many adult group leaders there were.

One of the teachers addressed the group, "This is like an overview. If we do all these things, where will everything fit--it will be too crowded. So we have to narrow it down in a way that makes sense to all of us and the space we have. We have to have a plan and consider how much space we want to use for a garden. We need a big Child Study Plan. When you do your research, you will have to make a good case for what you would like.

Remember we have to consider the materials we need to use and the costs of these materials. And we need to need to think of possible resources."

"You could get an expert," suggested Cory.

"What about other resources?" asked the teacher.

Bob answered with, "Draw a picture of the playground and what we want and label everything."

The teacher clarified, "Yes, after we have used our resources, we will need plans. But first, let's think of other resource."

"Books."

"The computer."

"Our parents for help and materials."

The resources were reviewed. "How else can we find out about resources?" the teacher continued to probe the students' minds.

"On the wall [the web], you might look and think there's lots of ideas, but some of them are really the same," suggested Nan.

Ellen offered, "Phone book--to call the experts--you can use the white pages or the yellow pages."

"You could look at playgrounds on field visits. They would give us information," suggested Brian.

"You could visit museums," was another reply.

The teacher refocused the group by explaining the expectation of the work in the next while, "We need for you to come up with good questions that we can research. Then

we need a list of specific resources you will need. And we need to know what each person in the group will research."

Bob offered one last possible resource, "I can find out if IMAX will have anything about playgrounds."

The students broke into their interest groups. I was asked to work with the group of children who were interested in the squirrels and rabbits. They were a small group of four. We met to draw up a cumulative list of questions of interest to research. This included: How do squirrels get such strong legs to jump from tree to tree? How do squirrels build their dens in the middle of a tree? Why do rabbits turn color? What happens to make them change color? What will we feed the squirrels and rabbits? We need to make a special spot where they can come and eat. What can we put in the spot to get them to come there? How do animals tell which plants are good for them? How are wild rabbits and tame rabbits the same? Different? How do flying squirrels really fly? What do baby rabbits and squirrels look like?

The students selected what they would research. Chloe and Nathan would work together on the baby rabbits and squirrels. Brian wanted to find out about the changing of the rabbit's coat of fur, and Morgan wanted to learn about flying squirrels.

Other students/groups of students would work on the flower garden, imagination makers, ponds, the life cycle of the butterfly, climbing walls, swings, the fort, balls, birds in a garden, pieces for free-form building on the playground, bees, balance beams, slides and worms/compost.

Phase Two

An Expert Visits

One afternoon, the father of one of the students visited the Centre. He and his family had travelled to Finland to partake in a World Play Conference. He had slides about Scandinavian playgrounds to show and talk about. The students had gathered in groups earlier in the day to discuss possible questions they would ask their guest if they were not answered during the slide presentation.

The students waited patiently and expectantly for the guest to arrive. Upon his arrival, the slides were set into the projector and shown. The students were impressed with many aspects of the playground shown. Comments like, "Neat!", "Wow!", and "Yes!" were frequently heard. Features that created these impressions included: wooden "huts" and A-frame houses made by the children with adult assistance; ladders on the roofs of the huts; hopscotch and other games drawn on the tarmac; zip-lines; climbing walls; mazes created with hedges; provisions for raising and caring for pets, especially rabbits; lots of trees, hedges and other plant life; fire pits; and waterworks of some sort. Nearby canals, lakes and rivers are cleaned up so that the children can swim in them. If these are not available, wading pools are created.

The inclusion of fire pits and waterworks was especially interesting for me. In most instances, adults do not include them in our playgrounds because of possible dangers. Freinet (1993) advocates that children be given the opportunities to thoroughly explore with sand, water and fire--nature's gifts. Then they can respect them and be unafraid. In describing the weakness of science, he writes:

> Until one day they see the necessity of also feeling the sap rise, and of hearing the eloquent language of opening buds or flowers that spread or wilt in a jumble of different colors according to the well-being and the vigor of each. Then they share an indivisible experience of life, not just through their education, intelligence and knowledge, but also through their emotions and their sensibilities, and through the matchless range of subtle potentialities we all have for seeing and understanding. (p. 28)

Perhaps adults need to let children discover the joys and the pains of the natural elements for themselves. In the playgrounds seen on the slides, these opportunities were provided for those who came to use them.

This also helps to explain why Katz and Chard (1989) advocate the use of topics that children have experienced in their projects, and the need for the four types of learning goals in considering the whole education of the child (p. 6-7).

The last slides showed how this family incorporated what they had seen and learned on their trip into their backyard playground.

After the slide presentation, the students had questions that were still unanswered after seeing the slides. They included: How do they build the equipment? How is it put together? Who builds the playgrounds? Where do they get the sand and wood chips? How experienced are you with playgrounds? Do you design playgrounds? How long does it take to set up a playground like this? Can you help us design our playground? How do you make the playground safe? (in reference to water, fire, and pet cages). How tall can the equipment be? How wide? How can we get the materials like paint or plastic?

The guest expert answered each question, and concluded, "You can come up with a design for your playground and take it to a landscape architect who draws a blueprint. Then you can make a 3-D rendering (model) of the playground and then you can build it. I am willing to help you."

The students broke into their small groups. In the group I observed this afternoon, the students and the teacher discussed their favorite ideas from the slides. Then the teacher brought out a map that she had sketched of her back yard. A legend had been highlighted. Discussion of this map feature followed, and then the students brought out their maps of their block structures created for the playground. They added detailed legends.

A Field Visit to Playgrounds

Naturally, the students were very excited today. It was the day of the field trip to the "expert's backyard" and the playground of a neighboring school. The excitement was heightened by the fact that rain had cancelled the visits the previous week. The students did not arrive at the backyard as a class; rather their parents dropped them off there and the teachers met them. There was time to explore and then the teachers assembled the students in one group to discuss the expectations for the morning. Clipboards and pencils had been brought. Each student was expected to make observational drawings of various aspects of the playground and/or a map of the play area. What needed to be included in these sketches was reviewed and a time line established. Off went the students!

Clipboards with sheets of paper attached and pencils were picked up by the students. Then they arranged themselves around the backyard, alone or in groups, to draw. The pond and the message centre were the two most popular spots. But the ways that the children

represented their observations in these two settings were indeed, varied. Some students focused on a single aspect in the setting, while others drew the whole picture.

Rhonda knelt on the board across the pond. She watched intently for several minutes. "I'm looking to see what animals I can see in here," she commented. "I have a pond at home, and I want to see if some of these creatures are like those I find there." Then she sat down, knees drawn up, the clipboard resting on them, and sketched the pond. She paid particular detail to the rock around the pond's outer edge.

Several other classmates also made representations of the pond area in their sketches. Some sketched the entire pond, while others focused on the animal and plant life in it. There was a great desire to wade in, but any such move was definitely forbidden.

Chloe sat in the middle of the yard and sketched the zip line in the message centre. The zip line was a piece of cable along which a bucket carrying a message was pushed. She spent a great deal of time there. When asked why she did not move closer, she responded that she wanted to see the whole line. Other students did move much closer and made their observational drawings from their perspectives.

Bob sat in a room of the playhouse and sketched it. This area had been created to remind one of a pirate ship. Especially intriguing was the fire area. Bob spent a good portion of his time there. Even when others had finished their sketching and were again exploring, he continued to sit there, and completed a detailed sketch.

On the other side of this pirate's cabin was another room that resembled a regular kitchen. Some children were in there.

Two girls found the pottery ornaments in the neighbor's trees most fascinating. One ornament represented the daytime and the other, the night. Fortunately, the owner of the

property was out on his deck and was eager to talk to them about these. The girls became "experts", pointing the ornaments out to several classmates because they were not readily visible.

There was a path of wooden rounds along one side of the yard. Some students followed it, carefully balancing themselves and their work materials. They then sketched the path they had followed.

Other students were interested in the garden and sketched what was growing. Labels for what they saw were most important in this instance. They also examined the adjoining compost pile.

The teachers also found an area where they could comfortably sit and observe. They, too, were busy at work. This scene was most heartwarming to observe. Too often, teachers assign tasks and then, themselves, become engaged in marking, preparing for the next lesson, or catching up on paperwork. The way the Project Approach is structured and implemented encourages the teachers to become actively involved in the activities because their role is one of facilitator and guide. How can these roles be accomplished without this involvement? As well, this is the only way that the teachers can gather the necessary information to ensure that the development of dispositions is reinforced, and that knowledge or skills that need further development or correction are recognized.

The sketches were collected, a snack was served and the students were given some more much-wanted exploration time. Happy voices and laughter rang out.

On the way back to the Centre, the students stopped at the playground of a neighboring school. This playground had just undergone renovation and new construction. Of course, the immediate response was to explore this location. However, the teachers

handed out the clipboards and pencils and asked the students to sketch observational drawings for fifteen minutes. Then there would be as much or even more time for exploring. The students readily agreed and off they went. The equipment drew most of the group because it was so new. A much smaller group gathered around the pond that was included. The "dock" and the rock overflow area especially drew their interest. Even I was drawn there. Ponds, ravines and pools of water have been considered possible danger spots. Now I gained a new appreciation for the inclusion of water. There is so much that children can learn from it. I made a promise to get some type of "waterworks" into my school's playground in the next few years.

I was also very intrigued by the process in which this school redid their playground. The students were surveyed, first and foremost. Their ideas were incorporated, as much as possible. The concept of an "outdoor" classroom was especially inviting. Too often, parent groups or service clubs choose what to include in a playground. Perhaps this helps to explain the vandalism that often occurs to such facilities. There is no ownership felt, and thus no responsibility for its maintenance.

The teachers kept their promise. After fifteen minutes, the clipboards were collected and the children were free to explore. Because the teachers stated their expectations in very definite terms, and then ensured that they were followed, there was very little, if any, discontent with the tasks being completed.

Doing the Research

"The Garden" group gathered around one of the big round tables in the grade two section of the Centre. The main research question, "Should our playground include your

topic of interest?" had been recorded on a large sheet of chart paper and posted on the wall nearby. As well, the research questions had been listed.

The teacher presented the time line, "You will make class presentations about the research you have done next Thursday and Friday. That means you have just one week to work. You will have to do your research and then find a way to share that information with the rest of the class. You will also have to decide if our playground should include what you are researching."

"What are some ways to represent your information (and the word, information, is stressed)?" asked the teacher. The students thought about the question. The emphasis on the word, information, required a different response than the usual.

"Use an overhead," suggested one student. There were many murmurs of approval.

"Make a slide show," replied another student.

"Remember we must be realistic. You have just under a week to complete all of this and be ready to present," reminded the teacher. There was general agreement that there was insufficient time for this method of representation.

"Make a poster," commented another student.

"Make a play," suggested a grade two student.

"You have some suggestions. There are probably others. Choose one that works best for your information and for you. Then get it ready," the teacher interjected.

"But before you decide on the way you will share your information, let's decide on the question each of you will research," she continued.

Research by Dweck (1987) found the differentiation of setting tasks for students in terms of performance and learning goals was essential. The manner in which this task was to be completed allowed for much student choice and did not seek one definite solution (e.g. How many questions can you complete in one period?) or have one purpose (e.g. You will need to know this information for a test next week.) The students accepted the challenge regardless of the success they anticipated--no marks would be given. Thus, the teachers had established learning goals and the students worked for intrinsic reasons. This is in contrast to situations where the task to be completed has only one solution or purpose, and is said to set up performance goals. Work towards performance goals are completed for an extrinsic motive.

Each of the students in the small group I facilitated decided to stick to their original interests. Brian pursued his interest of why and how rabbits change color in the fall and spring. Morgan wanted to know how squirrels fly. Chloe and Nathan researched baby rabbits and squirrels. Each of them would research one animal and then share the information for the presentations.

Before we began the actual research, we talked about the reasons behind the choices of research questions. Chloe chose squirrel babies because, "I don't have an animal of my own. Rabbits and squirrels are furry and cuddly."

Her partner, Nathan, concurred, "I like squirrels and rabbits because they are furry and feel soft. They are not like a worm, cold and hard."

Morgan found flying squirrels fascinating. "I think that perhaps they don't really fly--they don't have wings. But I don't know." His research would find out the answers.

Brian wanted, "to find out something new. I already know rabbits change their coats but now I want to know why and how. We also have lots of squirrels in our attic."

Our attentions now turned to the sources of information. The computer and books were the ones mentioned immediately. Additionally, talking to an expert or going to a place like Valley Zoo or the John Janzen Nature Centre were suggested, but ruled out because of the shortage of time. The four students were eager to go up to the library and do a search of information on the computers. Brian had done this type of work previously, so he was able to help me get the other three students going. The students found the books they wanted to use and wrote their call numbers on slips of paper. The books were found and signed out.

As we were leaving the library, Nathan commented, "Me and Chloe can go to the library by our place because we're neighbors. If we take out the books today, we can keep them for a week." Chloe quickly seconded the idea.

When we returned to the classroom, we found the classes were getting ready for the lunch break so the books were stored "in a safe place" until the next project work period.

When we met again, the students began looking through the books--first, in a general sense and then in a more specific one. Chloe and Nathan had brought in several extra books from their neighborhood public library and were very excited to share them.

"We even had time to look at them in the library," they commented.

As Morgan thumbed through one of his books, he spied a picture of a squirrel "flying" from tree to tree. He stopped to examine the picture closely and then read the accompanying caption.

"Hey," he exclaimed excitedly. "These guys don't fly, they glide!"

"How can they do that?" I asked.

"It doesn't say here. I'll have to find out," he responded. The direction for his research has just been solved. He recorded the fact that the squirrels glide on a sheet of paper and continued to search for the reason why.

Chloe and Nathan found several pictures and several sources of information for their topics of interest. They each chose books from which they could record some facts about the babies. They decided that because Chloe was in grade two, she would write out the information, and Nathan, who was in grade one, would read that information out loud to her. However, this meant that what Chloe was recording was merely being copied from the text. So how to record the information in their own words was discussed.

Brian was somewhat frustrated. He was having problems finding information about how the rabbit's coat changes color with seasonal changes. He would spend the time for projects that morning looking through the books and finding no satisfactory answer. Both Brian and I would look for other resources for tomorrow's class.

The next morning, I brought in two more resources, animal encyclopedias. I let Brian peruse these while I checked on the progress of the other students. Chloe and Nathan were continuing with their reading and writing. They had decided that their roles would be reversed when they began recording their information on rabbits. Then they could each illustrate their separate pieces of work.

Morgan needed some assistance reading about how flying squirrels are able to glide. We discussed what had been read in order to put it into Morgan's own words. Then he was left to do the recording.

Brian had skimmed through the new information. He was surprised to learn that rabbits have more than one coat of fur. In response to the amount of sunlight, the coat will change color. He captured the main ideas on his sheet of paper.

These four students would write, erase, write some more and draw illustrations. Throughout this time, the teacher responsible for "The Garden" group came by to check on the progress these students were making. With every visit, she praised aspects of the students' work. A phrase often overheard was that of "I really like the way you did. . . " She then went on to name the specific aspect she was addressing and explained why what had been done appealed to her.

Research by Dweck and Diener (1978, 1980) determined "two patterns of emotion, cognition, and performance" when students are faced with challenging tasks. When students experience positive affect, as in these situations, they find the tasks self-motivating and will focus their efforts. They will develop strategies for completing their work. They have positive self-evaluations on their abilities, and are mastery-oriented. Contrast this to a situation where students encounter negative affect. Their perceptions of themselves are not positive and they tend to decrease their on-task performance. They are in a state of helplessness.

When the group began discussing how to share the information they had gained with their classmates, they realized they had bits of valuable information but none of it really related to the main question that had to be addressed. New questions to research had to be drawn up. Brian and Morgan would see if rabbits and squirrels hibernate, what their "dens" looked like, and if these "dens" had other names. They would make a model of the natural habitat in winter and in summer to illustrate these facts. Chloe and Nathan would prepare an

overhead with illustrations sharing the information about the changing coats of the snowshoe hare.

As a group, these four students decided that they could not keep the squirrels and snowshoe hares as pets. The playground was not their natural habitat, and they should be free. If one of them should wander into the playground, that would be fine. But no attempt must be made to entice them in, or to keep them.

With all the presentations having been made, some ideas on the web were discarded because they were inappropriate, there was a lack of space for them, or their cost was too prohibitive. Because the headings in the web and the teachers facilitating them remained relatively unchanged, the student groups remained the same. However, the topic of interest to be worked on changed. The background information had been presented, discussed and evaluated. Now, the playground would change to incorporate these ideas.

Another expert, a landscape architect, was expected to visit. A model of the proposed playground was constructed of poster board and was displayed near the topic web. Questions to ask the expert had were recorded. The students went out to do a check of their playground to see if there was anything to be added. But alas, the guest was unable to meet her commitment. The teachers regrouped the students, reviewed the various activities that were being pursued, and then everyone went to work for a shortened period of time. There were no complaints, only some disappointed faces. Such is life!

Representations

Some of the students in "The Garden" group were removing weeds in the flower bed with trowels. Cory had uncovered an earthworm. It was a big earthworm, exceptionally long.

"He sure is healthy," commented Cory. The worm was carefully scrutinized and observed as it squiggled back and forth in the trowel, in a vain attempt to gain back its natural habitat. No one touched it. "You shouldn't touch animals. You can spread your germs."

This brought a smile to my face as I recalled the time the students were looking at some tadpoles and Jacob remarked, "Don't stick your hands in the water or you'll contamilate them."

A discussion ensued about whether or not to put the earthworm back in the soil. They finally did so even though some of the students thought the earthworm would dig its own hole. As they watched it being dropped in the hole, they saw that it started to curl up. This seemed to convince the students that the earthworms do not dig the holes.

Inside, Rhonda and Ellen were working on making a life-size model of a pond they would put in the garden.

"Tell me about your pond," I said.

In unison, the girls replied, "These are the rocks to go around it." They were both cutting out rock shapes form manilla tag.

Then Rhonda continued, "And I've got some gravel to put in it already."

"Have you dug the hole already?" I asked.

"No!" the girls responded.

"We're going to use part of an old whisky barrel. The teacher has one and said she'd bring it for us to use," explained Ellen.

"Ellen wanted to put a fence around the pond. That was dumb!" commented Rhonda.

"Yeah! Real dumb," concurred Ellen.

"If you put a fence up, it makes like a cage and animals need to be free," clarified Rhonda. I have had the chance to observe Rhonda in other situations, and I immediately noticed how very much alive she was when talking about the pond.

"Why did you think you should put a fence around it in the first place, Ellen?" I wanted to know.

"It was just a dumb idea," she replied very softly, eyes downcast.

"Perhaps, it wasn't," I persisted.

"Well, I wanted to keep it safe from kids," she replied softly.

"That's not a dumb idea. You were afraid the kids would damage the place?" I suggested.

"Yeah," she answered quietly.

"Well, hopefully the kids won't damage the pond. We want them to be able to see the animals in it so it can't have a fence," Rhonda explained in a much calmer manner.

"And we want to be able to just sit by it and relax--it's so peaceful by a pond." Ellen was much more animated once again.

"What made the two of you choose to work with the pond?" I inquired.

"Rhonda inspired me. I like ponds but I've never experienced having one so I thought I'd like to research it. And I wanted to work with Rhonda. We're best friends now even if I didn't like her at first," Ellen told me.

"Yeah, you wrote that note. 'Rhonda--out' and then you changed it to "Rhonda--in'," Rhonda reminded her.

"Rhonda, Ellen told me why she chose to work with the pond. But why did you?" I asked.

"I've had lots of experience around ponds. That's where I almost always play." And she went off to describe her pond with its five islands that can be reached using logs.

Allison and Chloe were making a rug for the playhouse. They had measured the floor size, "62 1/2 inches wide and 93 inches long!" they announced proudly. "We measured it by ourselves."

Chloe explained, "We're making the rug so we'll take off our shoes and boots, and keep the floor clean.

Allison continued, "This will be the inside rug."

"Yes - the boots and shoes stay outside!" Chloe announced firmly.

"And no wood chips allowed on our rug," emphasized Allison.

"Have you sewn before?" I wanted to know.

"Yes," the girls responded resoundingly.

The girls were very intent on their work. They were choosing fabric from the collection bag.

They discussed their choices as they were made, "This is my favorite color.", "I like these two patterns.", "I want a plain one, then a patterned one, then another plain, another pattern, and on and on." Once the pieces had been cut, they found needle and thread. They asked me to tie the knots in the thread and began to sew.

Chloe told me, "If we don't finish by the time school ends, my mom can sew it over the holidays."

"So can mine," volunteered Allison.

Because they were using large-sized needles with blunt points, they were having difficulty pulling the needle through the cloth.

"Can you help me push it through?" Allison asked. When I held the material, she noticed she did not have the pieces together correctly to make a seam, so we made adjustments. I held the cloth while Allison pushed the needle with a thimble. When needed, I helped to pull the needle through.

As Allison got near the end of the seam, she exclaimed, "Now I know what to do. I have to make three knots." I helped push the needle through and Allison cut off the thread. She then tied the three knots.

"Oh, no!" Chloe exclaimed. "Something's gone wrong here. I'll have to fix it." She examined her work very carefully to see how it might be fixed.

The teacher announced that it was time to clean up for the lunch break. Both Chloe and Allison were disappointed that their pleas to be able to work on their rug during the lunch hour were not successful. They packed the extra pieces of material into the plastic bag and lay their chosen pieces on top and then put the bag near their hangers in the locker room.

Two days later, project work began with a group gathering in the block area. One of the teachers reviewed the groups: House Construction, House Furnishings, The Garden/Willow Furniture, and Games. The students quickly reported on the progress they had achieved.

Nathan and Sandra had volunteered to make all the signs for the plants that would be planted in the garden. Nathan helped his mother with the gardens and knows a good deal about them.

"We'll make signs so everyone can tell what we have," he explained. The flowers that would be planted include the names on the seed packets in the fridge plus the names of the plants common in a butterfly garden. I cut the name cards with the paper cutter once Nathan and Sandra had decided on the size. Then we went out to make the signs.

Sandra and Nathan carried out the supplies they anticipated they would need to a picnic table in the playground area. Using felt pens, they carefully copied the names of the flowers onto the cards. Felt pens were used for the printing. Sometimes only one color was used per name card, and at other times, several colors.

Billie came over to the table. "Could you please make one more sign?" he requested. "Make it the biggest!"

"What should it say?" asked Nathan.

"No garbage, please," replied Billie.

Before an answer could be forthcoming, the work was interrupted by some loud shouting.

"I did it! I did it! I did it!" shouted Bob joyously. His facial expressions mirrored his enthusiastic yell, he raised his arms in the air in victory, his right hand clutching the hammer as he stood on a ladder. He had been working on the house frame and had hammered a nail in incorrectly, so it had to be removed. Pulling out a nail that was almost totally buried in the wood with the hammer's claw was a most difficult task. But he had persevered and achieved success. Bob's shouting was testimony to that fact.

Paul was playing with a toy. A teacher went over to him to suggest he become involved in some project work. "I just want to have a day of no choices for work. Everyday we have to choose something. Today I just don't want to!" he mumbled.

"But, Paul, you know we do project work everyday," reminded the teacher.

Paul looked up into her face. "So?" he asked.

"Paul, tell me why we have to work?" the teacher asked him.

Paul shrugged his shoulder and conceded. "Yeah, I know. If I don't work, I won't have no research. No research, no presentations. No presentations, no learning. Okay! Okay!" And off he went to the house construction group. Paul knew the purpose of the project work and its expectations, and realized that he alone, was responsible for his actions and the consequences.

Nathan and Sandra had printed the names of all the plants on their list, so now they were off to the Media Centre to get them laminated. "So they won't get spoiled in the rain," suggested Sandra. I inserted the name cards, and Nathan and Sandra collected the roll of laminated signs behind the machine. "Wow, this sure is long," commented Nathan.

"I'll carry it at this end, you hold this one," she told Nathan. We approached the cashier's desk.

"That's thirty cents a foot," the cashier replied in response to our inquiry of the price.

"How many feet do you think we have here?" I asked the two.

"I don't know--it's lots," replied Nathan.

"Maybe twenty-five," suggested Sandra. Actually we had used twelve feet of laminate. We paid and left.

"It's almost lunch time. Where do you want to store these until tomorrow?" I asked.

"Our cubbies are too small." offered Nathan.

"Somewhere safe," suggested Sandra.

"We could put them in my office," I said as we approached the room.

"That would be good," Sandra and Nathan agreed.

I opened the door and we left the roll of signs on my desk.

The next morning Nathan, Sandra and I retrieved the roll of laminated signs. I showed them how to cut out laminated signs--there needed to be a border of laminate around the sign. Each started to cut a sign at opposite ends of the roll. Nathan struggled going around the corner.

When he looked at me, he asked" How can I turn this all?"

Sandra was already cutting out her second sign, but the angle with which she had to hold her scissors as she cut around the corner caused her fingers to get sore.

"My hand is getting sore from cutting so much." But she would not quit.

I viewed their struggles. Then I suggested that I could roughly cut out each sign and then they could trim it neatly. They agreed. Once each sign was separated, the cutting went much more quickly.

As Nathan cut out a sign, he commented, "I brought some sweet peas in this morning. We already made the sign. I remember seeing it. I think I even made it." He shuffled through the pile and found the sign for sweet peas. He examined it closely. "Yes, I made it," he announced. Sandra looked over and confirmed this.

Nathan and Sandra returned to their cutting, very intent on the job. There was no further conversation. Once the signs had been cut out, it was time to "post them". It would take some time before we could begin that task. We needed to collect the stakes, decide on their height, cut them and then nail on the signs. The materials were collected and brought out to the picnic table. We did have to make some improvisations. All the "good saws" were

being used so we made do with a broken one. As well, there were no extra clamps or vices, so I held the stakes as they were sawed. Naturally, using these tools took longer to cut.

The first sign to be posted was the "No Garbage" one. They decided it should be the tallest sign "by lots".

"How are you going to attach the sign to the stake," I asked.

"With this stapler," replied Nathan, picking it up. The sign was stapled onto the stake.

"Let's go put the sign out in the garden," suggested Sandra. She and Nathan looked around for a suitable location. As they looked, Sandra noticed a sign that had been posted by someone other than the Child Study Centre. She noticed that a nail had been used rather than a staple.

"Let's use a nail," she said. "It will make it stronger.

Nathan ran in for some nails. It was the shortest nail he could find but it was still longer than the width of the stake.

"I'll just bend the top over when it's gone all the way," he explained. But when the nail had been pounded in, he found he was unable to bend it over. He looked confused. "How come theirs worked?" he asked.

"Look at it closely," I suggested.

Both students looked at the other sign. "I know! We need this skinny nail with just a little top." Nathan ran back to exchange the nails previously brought out. By the time he returned, Sandra had pulled out the first nail with some assistance.

Nathan pounded in the new nail, "Now it is working."

"Let's put the sign by this post so everyone can see it," suggested Sandra. Nathan pounded it into the ground.

As this was being done, Nathan heard one of the teachers mention the flower, delphinium. "We don't have a sign for that. And not one for these." (He points to a tray of marigolds).

"We need to make more signs," said Sandra.

"Perhaps you should finish these that you have started. Then you can think of more," I told them. They agreed. Two more signs were completed and put in place in the flower garden before the noon break.

The next morning, Joanne, who works in a greenhouse came by to suggest where each type of flower would be best located. She walked around the garden area and placed the signs on the ground in the best location for each flower. The other students returned to the classroom, leaving Sandra, Nathan and me outside to put each sign on a stake and place it in the right location. The students chose a sign, marked its location with a foot mark in the dirt, cut a stake, nailed the sign to the stake and then hammered the staked sign where it was to be found. Enthusiasm did not wane; they proceeded in assembly-line fashion. As they worked, they chatted about many things, most of them unrelated to the project work they were undertaking. With no distractions from the other students and no need to share equipment, the work went very well. By the end of the morning, only three signs remained to be put in place.

The students met once again for project work in the block area.

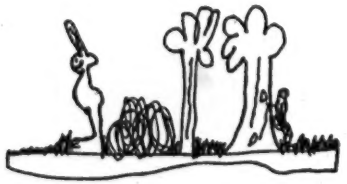
One of the teachers remarked, "My group and the other groups, too, have not written in our log books for some time. Today we'll bring it up-to-date. What should you include in your log book?" She wrote on chart paper:

- Where did you get your information?
- What did you research?
- What were your questions?
- Your presentation? What did you say? What did you use? What did it feel like to make the presentation? What did you learn from the presentations?
- What are you building now?
- How are you doing it?
- What are your plans this week?

Students wrote in their logs. They read their entries to the teachers and were given suggestions for additional data to include. A sample of a completed entry is included on the next three pages.

My presentation

I made a 3-D model for my prestation on squirrils & snowshoe hares. It was almost simular to a natural habitat. My audience was great. I explained to the audience That where ever there a pile of nuts beside a tree there's a squirril in that tree. It's called "a squirril mitten". And I talked about a natrual habitat. We decided we cannot keep them because we don't have a woodland.



Picture of my 3-D Model

Playground Project

Research

I picked this topic because i've seen lots of squirrils in my backyard and a snowshoe was running around campus. and I thought it would be nice to have some in our school.

topic

Squirrils & Rabbits

resources

My resources that I used were people and Books.

Lorraine

Questions

My questions were: do Rabbits & Squirrils hibernate? What do Rabbit and Squirril baby's look like

What do squirrils Lens & Rabbits "Lens" look like? do Squirril and Rabbit "Lens" have a different name?

How I used my Resources Were: I read The Books & made short notes. same with the articles.

Then the students regrouped in the grade one area.

Another teacher began this discussion with, "I spend all my time with the House Group and I don't get to see what the other groups are doing. Perhaps we could share this morning. I understand there is a bird bath being built. Could someone tell us about it?"

The teacher facilitating that group motioned to one of the students to take on this job. Kevin stood up and slowly made his way to the front. He faced his classmates and his face slowly livened up. "We're making a bird bath out of clay. One piece is drying."

"But I see a piece of. . . concrete," she said questioningly as if she could not believe it was concrete.

"That's the stem of another bird bath. We made it from concrete in the Fine Arts Building," Kevin answered.

"How did you make the concrete?" was the next question.

"We used powder concrete and added water and stirred it up. Then we could mould it," Kevin explained.

The teacher then asked, "Some people were digging a hole. What will be in it?"

"It's a hole for our pond in the garden area," Ellen responded quickly.

"We're going to fill it with pond water, creatures and plants," Rhonda offered in further explanation.

"Won't the water disappear?" someone asked.

"We'll add water from the pond each week, or maybe once or twice a month; if it's hotter, we'll have to do it sooner."

"Are you going to put the tadpoles in it?" another classmate asked.

"Yes!" both girls shouted.

A suggestion was made by one of the teachers, "You're going to need something around the pond for the frogs when they come out.

"Yes, we'll have rocks," said Rhonda.

"Also, lily pads," offered Ellen.

Another teacher asked, "You changed the location, didn't you? I thought it was going to be found at the bottom of the hill."

"We can't use the hill area because of the pipes under it. So we moved it to the garden area," explained Rhonda.

Billie raised his hand to share his group's progress. "Our group is the Garden Group. We have some of our plants in, we've got signs, we finished weeding and we're setting up an arbor. We'll put up a fence around it."

"Why a fence?"

"So people don't step on any plants," replied Billie.

The facilitator for that group added, "We're making a path so people can walk around the garden and enjoy it.

As a parting comment, Billie explained, "We're trying to make the signs different heights so there's not a sea of signs."

Bob volunteered to share his group's work. "The House Group is building a frame and we should be done soon. We're putting on some new boards because some are split and not good."

The question, "Is this house going to be permanent?" was put to him.

"No, we can move it around. We're planning to put a tarp over it.

Lance explained that his group was building a television for the playhouse. "We're making speakers for it right now."

Cory brought in the frame to demonstrate. "People can go behind the frame like this and be the show." He moved his head and changed his facial expressions.

"Oh, live TV," smiled one of the teachers.

"That's a great idea!" replied another teacher.

"Are you going to have a base for it?" asked yet another teacher.

"We're building a table for it. We got the ideas of it from the table at the Art Gallery," said Cory.

"Will there be a chess set under it like there was for that table?" one of the classmates inquired.

"No!" Cory responded most definitely.

Now that all the groups had been updated, one of the teachers suggested that the classes break into their small groups. The Garden Group met around one of the big round tables in the grade two area.

The teacher began the discussion with, "We're going to need plants."

"We can ask our moms and dads," suggested one of the students.

"We could write a letter to the parents. We'll need to get 37 copies run off. So someone will have to do a draft of the letter," suggested the facilitator.

One of the grade one girls volunteered, "We'll (Candace and I) do a rough draft and then type it on the computer." The group discussed what to include in the letter.

Recalling previous work, the teacher mentioned, "Do you remember when we did persuasive writing? We have to tell the children and parents why it's important to have a garden. Pam, do you remember what you told us about gardens in your presentation?"

Pam thought for a moment and then replied, "Gardens look good, feel good, smell good, and taste good."

Marci re-volunteered herself and Candace. Billie added, "I can help." The girls were not very receptive to his offer.

The teacher intervened. "But remember, Billie did the program for Peach Boy. He can give you lots of help."

"Oh, yeah, Billie, we need your help," conceded Marci.

"I'll type first," offered Candace.

"What are you going to type," I asked.

"We need a plan," commented Marci.

"I'm a slow writer and maybe not a very good one. But I can do it," said Billie. (I think the girls were suddenly very glad they had included Billie in this group.) Billie folded a sheet of paper into four pieces so "we can have two pages and staple them."

"Perhaps, to save paper, you might want to use only one sheet of paper and use both sides," I suggested.

"No, we want two pages and staple them together," stated Marci firmly.

"I think that's best, too," said Billie. That decided the issue. He began the letter: "Dear parents and Children of the. . . "

He paused and then asked Candace, "Could you please go out and check the sign outside to see how you spell 'Centre'?"

Both girls went out, checked the sign and return. "C-e-n-t-r-e," they spelled out. Billie continued. Candace picked up the paper and read what had been written so far, "We are the Garden Group."

"What goes next?" questioned Billie. The girls shrugged their shoulders.

"Remember what your teacher said," I suggested.

"I know, I know," said Billie, regaining his enthusiasm. "We need your help--emphasis, bullet, bullet! Lorraine, remember when we used the bullet for the program?" I nodded.

"Not bullets." Marci replied disgustedly. "These, " she said and she drew an exclamation mark.

"Use two of them," Marci told Billie.

Billie followed the girl's directions. "Now what should I write?" he asked.

"You've said you need help. How can they help?" I hinted.

Billie continued to write, "Can you bring us some flowers or seeds by Monday, June 22. For what we need, see next page."

Once he had completed the writing, he told the girls, "This isn't going to be Marilyn's responsibility to put them in the mailboxes--it's ours. We'll put them in the

mailboxes." The group went to the computer. There was difficulty getting started up because the plug was very loose.

Billie was very impatient, "I'll just write it out." But the girls emphatically refused. Gradually the "bugs" were worked out and the group members took turns typing out the letter.

When the Garden Group returned to prepare for the lunch hour, the teacher printed out a list of what flowers were needed for the second page of the letter. The group asked if I would stay during the lunch hour so that I could photocopy the letters and supervise the stapling and "mailing" of the letters into the student mailboxes. I agreed.

When the letters were photocopied, I showed the students where two letters in the names of flowers near the edge of the paper had been cut off. They had to make the changes on each letter by hand.

"I never believed you'd have to edit a photocopy from a machine," commented Billie. We discussed why this was sometimes necessary. Billie continued, "Let's do it assembly line style. You make the booklets and I'll staple."

The girls were not receptive to this plan. "We want to staple, too," they complained.

"Okay, we can all take turns," agreed Billie. He divided the pages into three groups. Each one was responsible for assembling and stapling the pile of letters before them.

As they worked, Billie once again commented. "Let's pretend we are working in a real office."

Marci replied with, "My mom is going to be so proud of me because I helped make these letters."

Once the letters had been stapled, they cleaned up their work area and went out for recess.

As I worked with the Garden Group, I was able to observe Rhonda and Ellen at work on their pond as it was situated near the picnic table. I was amazed at how the girls dug and dug and dug the hole in which to put the base for their pond. There had been very little rain in the past several weeks, and the ground was hard. Yet, little by little, the hole became big enough to fit in the tub. Classmates would wander by and ask to dig. But after a few shovelfuls, they were gone. Rhonda was more committed to the task than was Ellen. That was not surprising because Rhonda was the one with the pond experience.

Once the tub was sunk in the hole and dirt refilled around it to keep it in place, the rocks had to be placed. In the evenings after school, Rhonda would wander around the pond near her home and in her wagon, would gather rocks she thought would be suitable. Her mother would help her load them up in their truck to be brought to the Centre in the morning. The rocks would be unloaded, pulled over to the pond site in the wagon and arranged in place with assistance from one of the teachers. It would take three days to complete the outer edge of the pond to Rhonda's satisfaction. Then it was filled with water and whatever creatures were in that water. The addition of plants was left until the next year.

There were moments of adversity, though. Rhonda thought she should be in charge of the way the pond was set up because it had been her idea. Ellen, however, also liked to be in charge. Several times their ideas would conflict. Usually, Ellen would leave in a "huff" to go to another group. Yet, what was happening at the pond always enticed her back to work there until the next "spat".

Csikszentmihalyi (1997) describes "flow experiences" as those times when "what we feel, what we wish, and what we think are in harmony" (p. 29). They tend to occur when one responds appropriately to a clear set of goals. "Activities that induce flow could be called 'flow activities' because they make it more likely for the experience to occur. In contrast to normal life, flow activities allow a person to focus on goals that are clear and compatible" (p. 30). Flow activities provide immediate feedback that indicates how successful that action has been. In addition, flow tends to happen when one is involved with optimal experiences--the skills needed to attain a specific goal are just out of reach but one strives to attain it.

"When goals are clear, feedback relevant, and challenges and skills are in balance, attention becomes ordered and fully invested. Because of the total demand on psychic energy, a person in flow is completely focused" (Csikszentmihalyi, 1997, p. 31). Flow is

experienced when one is involved in favorite activities. The students working on The Playground project were engaged in "flow activities" and were able to attain "flow".

Phase Three

To share their project work, parents and siblings were invited to come to the playground and view the progress that had been made. Parents were invited to help plant some of the flowers. Students set up a hot dog stand and a lemonade stand to raise funds for their project. Samples of representations were displayed on bulletin boards, and log books could be reviewed.

CHAPTER VI

REVISIT WITH THE STUDENTS OF PROJECT. . .PUMPKIN

As I observed the students in the Child Study Centre, I often found myself thinking about my grade one students of the previous year who had completed Project. . . Pumpkin. I wondered if they could remember any specific moments from the projects we had undertaken, and if these had made any impact on their learning. So I decided to visit them to discuss those specific aspects. Of the eighteen students who had worked on Project. . . Pumpkin, sixteen were now in the grade two class at my former school. Of those sixteen, nine stayed behind one day after school to spend about an hour-and-a-half talking with me. I followed up the next day with much briefer chats with a small group of students to gain more detail and clarification of ideas shared.

I began the session by greeting the students in the Activity Centre.

"Thank you so much for coming, Grade Twos. This afternoon I would like to talk with you about the work that you did last year with the Project Approach--our studies with pumpkins in the fall, with toys just before Christmas, and with butterflies and frogs in the spring."

This was acknowledged by comments like, "Yes!", "Oh, yeah!", "That was fun!" and "That was cool!"

"I liked when we did the butterflies. We got to see how the cocoons, no the crystals or what are they (He looks at me with an inquiring look. I interjected, 'Chrysalis.') hatch and we got to let them free," commented James.

Tom spoke out, "I liked the tadpoles. We got to see them turn into frogs."

"I liked when we studied pumpkins and we carved them. It was fun carving them, and we made funny faces," added Liza.

Nina began, "I liked the butterflies because. . . " She went no further.

Renee took over, " I liked studying tadpoles. They looked like so weird and then they turned into frogs."

Very quietly, Carrie spoke, "I liked the butterflies. We got to let them free."

"Why was that important to you?" I wanted to know.

"Well, they're. . . (She searched for words and a frown crossed her face as nothing was forthcoming.)

James helped her out by whispering, ". . . wild animals."

"I liked when we saw the butterflies change--when the caterpillars went into the chrysalis and the butterflies came out. It was interesting how they looked in the chrysalis because you could kind of see what their wings looked like." Diana took a turn.

"And I liked when we carved one of the giant pumpkins from the pumpkin fair. It was so big! It was kind of neat because we carved it like a spider web and then we lighted it up. Spooky!" said James.

Jenni had been quietly waiting her turn and now spoke, "I liked when we set the butterflies free because they got to stay where they used to be. . ."

I interrupted her, "What do you mean by where they used to be?"

"You know, like mother butterflies fly around, then they find a place to lay eggs. The eggs become new butterflies and it can happen again. They like the flowers the most," she explained.

"Well of course, that is their food," added Tom.

Jenni looked at him, not at all pleased with the interruption.

"I liked when Tammy's auntie brought in that big pumpkin from the Pumpkin Fair. It was so BIG!" responded Renee. Her face registered surprise at the size.

Now Nina was ready to try and express her ideas again, "I liked when the butterflies were in their chrysalis. You could almost see them change and then they break through." (She clapped her hands for added effect.)

"Now I'm going to ask you some questions about some of the work that was done during the Pumpkin Project. First let's talk about the dioramas," I redirected their attentions.

"Oh, yeah," the students answered collectively. Their tone of voice seemed to indicate this had been a pleasant recollection.

"How many of you chose a diorama as a way to show what you knew?" I asked. Six hands shot up in response. "Can you remember why you chose them?"

"You got to work with Playdoh, clay and other things, and you could use different backgrounds," Diana explained. Her voice trailed off. When I nodded encouragement, she shook her head and said, "That's all for now."

Nina continued, "I liked mine because I got to do the animals and stuff. I love animals (She rolled her eyes.) like ducks. . . and all kinds of animals."

"Where were these animals found?" I wanted to know.

"At the petting zoo at the Pumpkin Fair," replied Nina.

"I liked it because you could make all kinds of shapes, and animals, and people," explained Liza.

"What do you mean by shapes?" I asked her.

"You know--like the fence and the way the gate went and their feeding dishes," clarified Liza.

Renee shared, "I liked it because it's fun." Her eyes lit up.

"Good point!" I interjected. "You said it's fun. What makes it fun?"

"Well you get to build stuff - I like doing that," she explained.

"How did we learn about dioramas?" I wanted to know.

"I made one at home," responded Tom.

"I didn't," responded Jamie rather slowly. "I saw it when the grade three's came to out room with their sharks and fishes."

"That's right, " echoed several of his classmates. Faces lit up and eyes widened as they remembered.

"So why did you choose to make a diorama?" I continued.

"If the grade threes did it, so did we!" said Liza confidently.

"Did you think you could do it?" I asked.

"You bet!" replied Tom. Several other students affirm, "Yeah!"

Carrie had been sitting very still, so I directed my next comments to her, "Carrie worked on another way to share what she knew. She made a booklet, right?"

Carrie nodded in agreement. "I made colouring pages, a maze and a seek-a-word," she explained.

"Can you remember why you chose to do that?" I asked to continue her explanation.

"I like doing things like mazes and seek-a-words and I thought others would, too," she added.

Nina had watched as I recorded the student responses and my questions. "I can't read handwriting."

"So, it's not for you to read anyway," admonished Tom.

To avoid further confrontation, I spoke up, "These notes are for me. I write down key words you've said so that in case the tape isn't clear, I'll know what we were talking about and I can ask you again."

Nina simply replied, "Okay."

"Let's continue," I suggested. "Jamie worked on something different."

"I took my little pumpkin and got to see how much it weighed.
I compared it to marbles and bolts and other stuff," he explained.

"Why were you interested in seeing how much the pumpkin weighed?" I asked him.

"Because. . . you can see how much it weighs. I like didn't think pumpkins could weigh that much," he answered.

Andrew has not said anything yet so I tried to include him.
"Andrew, you created something special. Do you remember what you did?"

"Yes, I remember," he replied. "I made a cartoon of Giant Pumpkin but I can't think why."

Diana picked up on the words, Giant Pumpkin. "We were so happy when the giant pumpkin came to our room. It wasn't just like those little, tiny pumpkins that we use, like everyday. It was MUCH bigger!" With her hands, she drew a huge pumpkin in the air.

I continued to try to get Andrew involved in our conversation. He was biting on his shirt sleeve and moving around a great deal.

"Andrew, what project were you really interested in?" I asked.

"I really liked the tadpoles. I could watch them turn into a different shape. And they got legs," he finally responded.

"Do you remember anything special about that?" I interjected.

"Well, I think it was the left leg that always came out first," he explained.

I changed focus again. "When you think of the way we did projects, and then think of the way we did other things like Mad Minutes and Phonics, did you notice any differences?" I questioned the group.

Diana quickly responded, "We aren't all doing the same thing in projects like we do in those other ones. This way, if you looked over at somebody you couldn't just copy their work."

"What would you do then?" I asked.

Without any hesitation, she replied, "Think about what I could do myself."

"But what if someone needs help on this?" Nina questioned in obvious concern.

"Remember--we just asked our teacher or we asked our neighbor or our friend," explained Liza.

"Is this a better way to do work?" I wanted to know.

"You get to spend more time with others," offered Renee.

"You get to talk with them," added Jenni.

"You get better work," suggested Nina.

"You like don't have to wait till teacher comes to help you. You do it yourself or find help," explained Jenni further.

"If. . . (and then she changed her train of thought) You don't have to struggle to find the answer," commented Liza.

"Can you think why you chose to do what you did?" I asked.

"I wanted to learn about weighing because I didn't know it yet," explained Jamie.

"I always make cartoons. They're fun to make," commented Andrew.

"That's because he's always watching then on TV. I know--I'm at the babysitter's with him," offered Tom.

"Is that correct, Andrew?" I questioned.

"Uh hmmm. . . They give me lots of ideas," Andrew replied.

"Renee, you brought in something for a baking class. Do you remember what it was?" I asked.

There was a brief pause. "Oh, yeah! A recipe for pumpkin soup. I like cooking," she recalled.

"Did you enjoy cooking?" I directed this query to Carrie.

She nodded her head and said, "Cooking is really fun."

"What makes it fun?" I wanted to know.

"Because the food you make is yummy," replied Nina. She answered very quickly and licked her lips.

"You get to make different foods," added James.

"Because when you're young, you can't do cooking at home very much and so you can do it at school," explained Diana.

Very quietly, Jenni said, "You get to fake to be like an adult."

So I asked the students what made it so appealing to be like an adult. To which Diana replied, "So I'll know what to do when I'm older."

"So I'll feel grown up," echoed James.

"When you do it, you can feel proud. Because you just did what an adult did," responded Renee.

"Do you like doing things adults do?" I asked.

"It's fun," came the reply.

"Are all things adults do fun?" I then queried.

"No!" was the reply.

"I don't think working at a job is fun," commented Nina.

"Well, not all things adults do are fun. Some things I like doing if I can do it and it makes me feel good," explained Carrie.

"I don't like doing the laundry, doing the dishes. I'd rather go to school or stay at home--just not work," said Diana.

"I don't really like all the things adults do because sometimes they have to do too hard a job," continued Nina.

"I don't like all that hard work because then you don't get to play and all that," added Renee.

Sometimes I don't want to do what my mom and dad do because it seems pretty hard--like going to work, and doing paperwork," explained Liza.

"And it can be pretty boring, too," remarked Nina.

"Like sometimes I don't want to be a grown-up because sometimes you have to do really hard work and sometimes you're really struggling when things are really heavy," said James. James had lost his father very tragically a year-and-a-half ago. I didn't pursue this comment any further because I didn't know where it would lead.

"When you chose to do things in the project, did you think you could do them?" I inquired.

This question was greeted by a chorus of "Yes!" Heads nod in agreement.

"Do you ever choose things you don't think you can do?" I continued questioning.

"They can be boring," stated Diana.

"Why?" I wanted to know.

"Because you can't get going," replied Diana.

"You'll make lots of mistakes," added Renee.

"Well is there anything wrong with making mistakes?" I asked.

This time a chorus of "No!" was heard.

"But I don't like making mistakes. I don't feel good," explained Jenni.

"Does anyone else feel like Jenni?" I wanted to know.

"I hate mistakes!" Tom answered very assertively.

Others chimed in with, "So do I!" or "Me, too!"

"But can't you learn from mistakes?" I queried.

They all agreed that you could.

I continued, "Diana said working on something hard can be boring. What makes it boring?"

"You can't go really fast," said Jenni.

"You think it's so hard and stuff, you get stressed," explained Renee.

"Yeah you work so hard and it might not be right," agreed James.

"I don't like doing things that are hard because if I think too hard, I might get nervous. Then I can make lots of mistakes," offered Carrie.

"Sometimes things look really easy but when you try them, they're really hard," remarked James.

"Should you never try things that are hard?" I asked.

"No, because it might be just too hard," responded Nina.

"Yes, sometimes you should because you could learn more things," countered Carrie.

James followed up on this comment, "Because sometimes if you don't try something that's hard, you can never know if you can do it."

Jenni continued, "If you do something really hard and you do it well, you can feel really proud."

"And if you do something once, next time it's not so hard," chimed in Allen.

"If you find something really hard to do, how can you help yourself?" I then questioned.

"Ask someone for help."

"Do you remember when Mr. Jones, the district agriculturist, came to talk to us about the pumpkins, we called him an expert," I reminded the students. "Why do we need experts?"

"Because they really know lots of stuff about that thing and if you don't know it, you can learn it. Then you can be an expert like them," replied Liza.

"Then you can learn more," added Renee.

"And I could teach them things," James responds questioningly.

Diana shook her head, and voiced a most definite, "Yes!"

"When you do projects, you choose what to do. Is this better than having me or another teacher telling you what to do? I next asked.

"You can know what to do," offered Renee.

"Yours might be a very good idea," added Liza.

"So you can choose something that you know how to do, and if you don't know how, you can ask someone to help," suggested Diana.

"But if you do what someone else says, it's probably not as much fun. When you have your own way, it's fun for you, commented Jenni.

"Does it help to work with someone else?" I questioned.

"You can get more information," remarked Carrie.

"You can get new ideas," added Liza.

"If you're building something and you're using popsicle sticks and you run out of them, you can ask them to get you some more while you hold it together," explained Diana.

"And if you're stuck on something, you could copy them but yet do your own," suggested Renee.

"Or they could just get you started," added Liza.

Several moms had come to pick up their children. So the discussion for the day ended.

The next day, time permitted a brief meeting with only Diana, Carrie and James. I recapped from the previous day, "Yesterday when we talked, the three of you said projects are fun. I'd like to talk to you a bit more about what makes them fun."

James initiated the discussion, "Well, you can work with other people in your class. If you don't really know them well because maybe they're new, or if you haven't worked with that person before, you can make new friends."

Diana nodded and continued, "When you work with others, they can help you if you run into trouble. And then when they have problems, you're there to help them."

Carrie took the discussion on another route, "When you work projects, you choose what to do. So you usually choose something you can do, or maybe something you think you can do, so you can get to work."

"But maybe you'll need help if it's something you only think you can do?" I wondered.

Diana interjected, "Well, not really. You chose to do that because you thought you could do it, so you must have some ideas of what to do."

"And if the first one doesn't work, the next idea might," suggested Carrie.

"And if you make the choice, you try harder to make it work," commented James.

"Okay, let's think of things that you like to do, and things that you don't like to do, and then think of what it is that makes you like or not like that thing," I said.

"Well, I liked doing crafts but I don't like cleaning my room," responded Diana.

"I like reading but I don't like raking the leaves in our trees," replied Carrie.

But James had no dislikes to report, "There's really nothing I don't like."

"Now what makes you like those things you like to do?" I added.

"You can be away from things that bother you. If something bothers me, I don't do it," explained Diana.

"Maybe things you don't like are too hard. Then it gets boring because you just sit there and do nothing," added James.

Carried offered this comment, "There's more space."

She did not offer any further comments so I asked for further clarification, "What do you mean by that?"

"When you work alone and are having fun, you have more space than when you work in a group. There's no one to stop you and your ideas have their own space. No one tells you what to do," she explained.

"When you do projects you don't worry about feeling bad. You make the choice and your group has to co-operate," replied James.

"What if you're working alone?" I asked him.

"Then it's only you, so you don't need to feel bad. You can do it!" he replied.

Diana expounded on the theme of feelings, "When it's something I like, I probably won't get hurt. Nothing will be happening to me."

"Diana, can you explain that a bit more," I suggested.

"Well, if it's something I like, I probably can do it. So I don't get hurt--my feelings don't get hurt. Or, if it's something I think I can do, and I do get hurt, it's okay because things like that can happen. I tried at least," she offered.

Carrie looked at it another way, "When you don't like something, it's boring. You don't know what to do."

"Yeah you just sit there. You're not active," added James.

"When you really like something, you feel excited," responded Diana.

"You're not nervous," commented Carrie.

"Time goes by faster," said James.

Diana's eyes widened and she eagerly interjected, "That can be a bummer."

James picked up on this idea, "It, like sucks, when you have to stop."

Carrie continued, "I'd rather not stop because I have a good feeling inside. I feel like I want to show off what I can do."

"Are you saying that when you do things you like, you don't ever have any bad feelings?" I questioned.

"Not really. Because if you stub your toe, you think about what you're doing. And if it's something you like, you can forget your toe," explained James.

"I like to run races," said Carrie. "But sometimes I get a sideache. But I keep running because I like it."

"And sometimes someone can say something that makes you feel bad and you're hurt that way. But if you're doing something you like, it's easier to try not to hear that person," offered Diana.

We had spent a considerable time discussing this aspect of project work and new ideas were not forthcoming, so at this point our discussions were terminated. Terminated for the oral portion, but definitely not for the thought or reflective portion. There was so much the students had offered.

In his research on creativity, Csikszentmihalyi (1996) found that what motivated people who devoted many hours to certain avocations was "the quality of experience they felt when they were involved with the activity. . . it often involved painful, risky, difficult activities that stretched the person's capacity and involved an element of novelty and discovery" (p. 110). He summarized nine elements that made an experience enjoyable:

1. There are clear goals every step of the way.
2. There is immediate feedback to one's actions.
3. There is a balance between challenges and skills.
4. Action and awareness are merged.
5. Distractions are excluded from consciousness.
6. There is no worry of failure.
7. Self-consciousness disappears.
8. The sense of time becomes distorted.
9. The activity becomes autotelic [the Greek word for something that is an end in itself].

(p. 111 - 113).

The former grade one students who discussed their project work with me on these two occasions were able to capture the essence of these elements in their own terms. A good part of the enjoyment they felt was the feelings that were experienced as they became involved with their work.

Teachers often, mistakenly, lump enjoyment together with education and employ "cute" popular movie or storybook characters and themes. They believe this will ensure that enjoyment will result. "They fail to realize that enjoyment is a side effect or by-product of being engaged in worthwhile activity, effort, and learning" (Katz & Chard, 1989, p.5). All the students that I observed and talked to found enjoyment in their involvement with their work.

CHAPTER VII

DISCUSSION

The primary purpose of this research study was to gain a more complete understanding of the involvement or engagement of children's minds when they were working with the Project Approach. By observing a class at work throughout their study of The Playground and by revisiting with former students who had completed Project. . . Pumpkin, I was able to explore more deeply what meanings the students created for themselves. In using the insights I have gained I hope to be able to continue recreating situations where students will engage themselves in their studies.

There exists among educators today the "tendency to overestimate children's academic ability and to underestimate their intellectual capacities" (Katz & Chard, 1989, p. 41). Freinet (1993) supports this view when he writes, "School has under-valued, misunderstood and neglected the real energies that, in children, work towards education and life: . . " (p. 157). The Project Approach is an attempt to break free of the need for educators to address the deficiencies they believe students have and build on their strengths. Commonly, teachers design their programs based on the curricular directives of the Department of Education and not the needs and interests of their students.

"A sense of *engagement* is unlikely to happen if there is no perceived need or purpose for learning in the first place. Engagement depends on active participation by the learner" (Cambourne, 1995, p. 185). Having the students involved in the study of their playground, the production of Peach Boy, or a local celebration that draws provincial and national media attention, such as the Pumpkin Weigh-Off and Fair, ensured that there was a

concerned involvement of all the participants. Because the topics were found in the students' immediate environments, there was never any lack of authentic discussion or representation.

Teachers of primary school students may be hesitant to have their students attempt a project study because they feel the lack of reading skills will be a deterrent. But the learning that occurs with the Project Approach does not mainly come from books--many other resources are highlighted. Inviting an expert into the classroom makes the students use listening and viewing skills. The father who had attended a National Play Conference brought in slides to illustrate the concepts on which he focused. The lady who raised a giant pumpkin and came into the grade one classroom to carve it was able to show the students how the giant pumpkin differed from the regular type. Because of their immediate interest and knowledge of the topic, experts can involve the students in ways the teacher can not.

Field visits like going to the playgrounds or to the Pumpkin Weigh-Off and Fair enable the students to see first-hand what can be discussed. Some of their questions can be answered right then, and new questions that develop become more authentic than when students try to envision what they might like to ask.

In originally thinking of the "engagement" of children's minds, I was certain that intrinsic motivation was involved. Brophy (1983) states:

> Motivation to learn refers to an enduring disposition to value learning for its own sake--to enjoy the process and take pride in the outcomes of experiences involving knowledge acquisition or skill development. . . when students engage themselves purposefully in classroom tasks by trying to master new concepts or skills involved. Students who are motivated to learn will not necessarily find classroom tasks

intensely pleasurable or exciting, but they will take them seriously, find them meaningful or worthwhile, and try to get the intended benefit from them. (p. 9)

However, the study of intrinsic motivation did not begin with Brophy. As early as 1918, Woodworth reported that there are general motives such as curiosity, self-assertion, and constructiveness which provide the energy for specific mechanisms or abilities to operate to satisfy themselves. These derive from inate capacities that he called native equipment (Deci, 1975). Woodworth's work used much input from the writing of McDougall (1908) regarding human instinct. With the rise of behaviorism, intrinsic motivation did not receive much further attention. By the late 1970's, however, there was renewed interest in intrinsic motivation, and much research was done into its role in education.

DeCharms (1976) (see page 50) and Brophy (1983) (see page 68) adopted what initially seemed to me as contrasting views of the teachers role. DeCharms spoke of personal causation as responsible for the motivation for learning while Brophy described the need for socialization agents to promote it. Now I can see that the two are intertwined. Students have an innate curiosity and a desire to learn. But teachers are responsible for ensuring that conditions are appropriate for learning to occur. While students are ultimately responsible for their learning, they need the guidance and modelling that is provided by teachers and other adults in their lives, as well as their classmates.

At the Child Study Centre the teachers are involved with a great deal of planning in establishing learning goals and possible ways to see they are communicated and made explicit for the children. Teachers plan individually and in groups daily as well weekly when students are dismissed one hour early every Wednesday afternoon. Teachers

communicated this planning to their students regularly. Often I heard the remark, "Last night when I was thinking about. . . " or "When all the teachers discussed this yesterday. . . " Evidence of the teachers' planning was also displayed on chart paper in the Centre. The purpose of all this planning was shared with the students. Now the students could sketch objects brought in for the next day's work, describe what they anticipated as their final representations, or write down how they would complete a aspect of the research. This then served as a guide for their work. The comments by a student highlighted this process, "Yeah, I know. If I don't work, I won't have no research. No research, no presentation. No presentation, no learning! Okay, okay." And he went to his work.

Another example of the need for planning to direct and support children's work was provided by Rick, a grade one student. He was busy sawing pieces of wood. He was definitely "into" the sawing action--his teeth were clenched and the saw jerked back and forth in rapid motions. Once the first piece of wood was finished, the clamps were moved and another piece was ready to be sawed.

"What are you doing?" the teacher questioned.

"I'm cutting pieces of wood," Rick answered somewhat disgustedly. After all, was it not clear what was happening?

"Yes, I can see that you're sawing the wood. But what are you going to do with the wood?" the teacher patiently clarified her query.

"Uh. . . I. . . " No response was forthcoming.

"Maybe we'd better take a look at your plans," suggested the teacher. Rick retrieved his folder of work and the plan for a garden sculpture was shown to the teacher.

After considering his plan for a brief time, Rick announced, "I want to do this part. I want to nail these six pieces."

The teacher commented, "That's quite a bit of work to finish this morning. But I know you can do it." She walked over to another student.

Rick now realized he did not need all the wood he had cut, so he returned it to the Wood Box, and began to work with only the pieces he did need. His plan had shown him what to do. All the teacher did was remind him of it. As well, it had been done in such a way that in no way was Rick made to feel incompetent or not in control of his learning.

Because teachers stated their expectations in very definite terms and then ensured that they were attained, there was little discontent among the students about completing their tasks.

The teachers all participated in the discussions. Discussion time was not used for one teacher to interact with the students, and the other teachers to catch up on other activities. Although one of the teachers would assume the role of leader of that discussion, the others listened carefully, contributed their ideas and suggestions as needed, and made notes of misconceptions or ideas for future lessons.

Often the teacher became involved in making representations. Students would come to see the work she had done, and in that way gained new inspirations for themselves. However, the teacher was most mindful not to impose any of her ideas. I was surprised to see that the teacher's work was accepted as just another person's representation--students did not rush back to their work areas to copy what she had done. Only if they felt that an aspect of the teacher's work would clarify or extend their own work did the children incorporate her ideas into their representations.

Research by Dweck and Diener (1978, 1980) (see page 94) referred to the patterns of helplessness and mastery-orientation students can adopt when they are faced with challenging tasks. The students "engaged" in the Project Approach are presented with positive affect during challenging tasks. Recall the young boy trying to remove the nail from the frame house. It was bent at an almost impossible angle for removal, but the teacher encouraged him to continue with his efforts to pull the nail out. At one point I did think that Rob would give up, but the teacher came over.

"Way to go! I can see that you've just about got it," she commented. A new look of determination crossed his face, and soon after, the bent nail was removed. The positive feedback of the teacher gave just a little push to Rob, and he refocused his efforts, moving the claw of the hammer a little further up on the beam of wood. The nail came out!

At all times, the teachers at the Child Study Centre viewed their students as being capable of completing the tasks the children chose for themselves. Even when the task probably will not be successfully completed, the teachers let the students determine that fact for themselves. Chloe and Allison were busily cutting pieces of cloth for a rug for the playhouse floor. The dimensions were impressive, more than sixty centimetres by ninety centimetres. Yet the girls were cutting out little hearts that would fit into a three centimetre square. I recall commenting to the teacher heading the Garden group, "Is this rug a reality?"

Without a moment's hesitation, the teacher replied, "Of course. If the girls get it together, we can get one of the mothers to see a backing for it. Then it will stay together."

And no, the rug was not completed. After three days of cutting and trying to stitch the pieces together, Allison and Chloe gave up on their dream rug. They simply told the

teacher this representation was a no go and why. The teacher simply asked them to re-evaluate their interests and relocate to another group.

Dweck (1987) (see page 91) determined that when task assignments are presented in terms of learning goals--student initiative and choice are not limited, the challenge of completing that task will be the motivating factor. Learning goals were initiated by the teachers right at the beginning of the study of The Playground.

"We need for you to come up with good questions that we can research. Then we need a list of specific resources you will need. And we need to know what each person in the group will research."

Assigning the task in this manner (learning goals rather that performance goals where students work for favorable recognition for the completion of a task) guaranteed success for everyone.

Carol and Russell Ames looked at intrinsic motivation in terms of the goal structure and the way in which "rewards" were distributed. In a competitive structure, the competency of the individual student is viewed in terms of the public recognition of task completion. In a co-operative setting, each person in the group must assume responsibility for completing as part of the whole task. Success is a shared victory. In an individual task orientation, the student focuses on the task and is rewarded on the ability to complete that task. Students will exert more effort and develop more positive self-concept in the co-operative and individual settings. There is no need for competition in the Project Approach. Learning goals are set and immediate feedback provided by describing work competence. Most students worked in small groups. Bryan liked working on his own when he was making the

model table from willow. But it was the small scale of the work being completed that made individual work preferable.

Encouraging students to work in small groups facilitates the processes of "imitation, pauses, excessive leaps forward, and requilibrations. Children demonstrate sudden flares of ideas, explicit or silent exchanges, and dialogues into which the adult is also drawn" (Young Children, November, 1993, p. 11). In this learning context, students can develop their own conversation, their own way of representing and thinking as they seek to construct meaning from their experiences. As Chloe, Allison and Emily drew their maps of their playground, they were drawn into a conversation about "swear" words. They had a valid point to consider, "What made swears, swears?" Had they been working in a competitive setting, this would never have occurred.

In addition to the theories of intrinsic motivation, I also found that the concepts of caring, of building relationships, of work-play, of creativity, and of flow directly influenced the "engagement" of children's minds.

In an article for the journal, Young Children, Loris Malaguzzi, the founder and former director of the Department of Early Education in Reggio Emilia, described the need for developing relationships in the educational setting. He stated:

> We view relationships not simply as a warm, protective backdrop or blanket but as a coming together of elements interacting dynamically toward a common purpose. . . We seek to support social exchanges that better ensure the flow or expectations, activities, co-operation, conflicts, and choices, and we favour discussion of problems that integrate the cognitive, affective and expressive domains. (Young Children, November, 1993, p. 10)

Kevin provided a perfect example of how the building of relationships brought out the very best in him. I had not heard Kevin speak in the Child Study Centre. If I had been asked to describe Kevin, I might have used words like, "disinterested", "unfocused", and "inattentive". However, my perceptions of him changed very dramatically the day that each group gave a brief summary of the work they were doing. The teacher in charge of the bird bath group asked Kevin to be their spokesman. Kevin got up and slowly walked to the front of the area in which the groups were meeting. Slowly he turned to face his audience. I watched as his eyes widened and his face lit up. Without any hesitation or assistance, he gave a brief description of what the bird bath group had completed and what they were still working on. He answered the questions directed his way with ease. Was this the Kevin I had thought I knew?

I mentioned to his teacher how impressed I was with the job he had done. I wanted to check if I had initially judged Kevin incorrectly.

"No," the teacher replied. "You had the right impression. Kevin did have a really hard time focusing, and was often disinterested."

However, Kevin chose to work in the bird bath group. Slowly, he seemed to "buy into" the tasks that needed to be completed. As he did so, he became articulate about the group's accomplishments. He began to feel very comfortable with the group, and gave his best efforts. The teacher mentioned that Kevin also started to talk to her before and during the project time. Through these discussions, the teacher was able to determine that Kevin, in fact, had a good deal of knowledge and expertise in this area.

When it was decided to have a sharing of group work, the teacher realized this would be the perfect opportunity to let Kevin be the "expert". She knew he could do it

because of all the details he had shared in their discussions. And if something happened, that Kevin was unable to do the job alone, other groups members would be able to assist. Naturally, Kevin came through!

Kevin went from virtually a non-participant to an expert because his teacher was able to develop a relationship with him. It is true that Kevin made the initial choice for working with the bird bath group but it was his teacher's caring and her ability to build a relationship with him that showed up his expertise. She had listened to him, encouraged him and assisted him in clarifying the details of their work. She made Kevin feel valued, a vital part of the group. He experienced much positive affect and responded to the challenges the situation presented enthusiastically.

The trust Kevin gained with this experience gave him the confidence to talk to me. The next day I complimented him on the fine job he had done sharing his group's work. Much to my surprise, we talked another ten minutes. He told me about the Fine Arts Building where the cement bird bath had been moulded, about his mother's work as a scultptress, her latest work, where it was displayed, and how I could get there to see it. We finished the conversation with Kevin explaining he liked watching his mother work and how he sometimes could work along with her. I was impressed!

At the end of the school term, when I briefly returned to the Child Study Centre with my nephew one afternoon, Kevin offered to be our guide in the Kindergarten area.

In contrast to Kevin's initial disinterest and inattention, Rhonda was very focused and most definite in her belief that the playground area needed a pond. She used her time and energy to see that task completed. She and other classmates dug the hole for the pond over several days. Even though the ground was rock hard because of the lack of rain, her

enthusiasm did not wane. She continued digging until the tub could fit in. Carefully, she refilled the area around the tub. At home she gathered rocks and brought them into school. She spent time arranging and rearranging the rocks around the pool's edge with the teacher's assistance. She was definitely "engaged".

Rhonda had a clear goal of setting up a pond in the playground. With the assistance of her teachers and classmates, she was able to complete several smaller goals to attain the end result. She received immediate feedback from both adults and students on her progress. A balance between challenge and skills was maintained. Her concentrations were not distracted by the activities being undertaken around her. She did not entertain the notion of failure. Completing the pond became an end onto itself. Rhonda definitely experienced flow and enjoyment in her learning activity (Csikszentmihalyi, 1996) (see page 131).

Some might question if Rhonda's work in setting up the pond was in fact a learning experience. Where was the best location for the pond? How big should the hole be? How could the earth be made softer so that it would facilitate digging? Once the tub was in place, how could its placement be maintained when the extra space was filled in? How could the rocks be transported? How should they be arranged? What kind of pond life would be most suitable to establish? What care would the pond need to sustain its life? These were all concerns that Rhonda had to address and find solutions for. She was definitely engaged in learning!

In the description of The Peach Boy, Cory mentioned that he took on the job of reviewing the play and helping Billie produce the pamphlet because he would like to be an editor and reviewer. When the small group of students is composing the letter to be sent home to seek flowers for the garden, Billie compares the work they are doing to "office

work". Students, especially younger ones, like be in situations where they can directly relate to the real world. Freinet (1993) claims that :

> CHILDREN HAVE NO INNATE NEED FOR PLAY; there is only the need for work, which is to say the biological necessity to employ their life force in an activity that is at once individual and social, that has a perfectly clear goal, within reach of children's capacities, and that allows for a wide variety of reactions: fatigue-rest; excitement-calm; emotion-tranquility; fear-security; risk-victory. In addition, this work must support one of the most pressing mental imperatives, especially at that age: the sense of power, the permanent wish to excel, to surpass others, to win victories, small or large, and to dominate someone or something. (p. 191).

The Project Approach encourages this to occur.

Further Freinet (1993) writes, "human beings, and above all children, tirelessly pursue their course towards life, towards activity. They need creation, triumph, and control. Risk serves only to heighten this need" (p. 203). The Project Approach allowed the students control over their choices and their working situation.

Representations were created to share the learning achieved. Success was guaranteed.

Diana captures these ideas when she answered my question, "But maybe you'll need help if it's something you only think you can do?"

Diana interjected, "Well, not really. You chose to do that because you thought you could do it, so you must have some ideas of what to do."

Carrie added, "And if the first one doesn't work, the next idea might."

"You'll try harder if it's your idea," commented the third student.

Being able to become a participant observer in the Child Study Centre where project work was in progress gave me the opportunity to view the work in a different perspective. I was not responsible for the project's implementation as I had been when I had undertaken project studies with my grade one class. I had the opportunity to sit back and watch the whole study evolve. I was able to anticipate more about what the next comment/step might be. I had more time to evaluate and compare and reflect. This made me realize that as teachers, we do not do this enough. There is so much we could learn and so much progress we could make about common concerns if we were more willing to open our classroom doors to our colleagues. Presently, having an observer in your classroom is threatening because an evaluation of some type is being undertaken. I know in our school that is slowly being overcome because the administrator's role is to observe every teacher in action at least once every year. Perhaps this can be a focus for the new Personal Professional Development Plans that the government is mandating.

Having experienced the Project Approach on my own and in my observations, I can honestly say it has impacted my teaching significantly. I have become very conscious of how I describe the goals of the work we will be undertaking. I strive to make them learning goals rather than performance goals. I like to structure learning experiences as "Origin" situations where the students retain control. Co-operation and collaboration have become tools used more frequently. This will assist in building relationships and developing spirituality. Even though I realize that I am a socialization agent for my grade ones, I enjoy being a guide or facilitator and not an instructor. This encourages independence and risk-taking in my students. I try to provide the conditions whereby the students will experience

flow activities and flow itself. That has led to creative representations of student learning. The students have been involved in work-play on many levels.

I am now able to better understand why I do things in my classroom the way I do. I have rarely ordered workbooks for students. Now I understand that workbooks stiffle students creativity and make the student feel in a "Pawn" position. I have used Math Their Way as the basis for the math instruction. This program definitely sets forward learning goals and not performance goals. For example, when looking at the equations that will make 7, Math Their Way encourages the students to explore with beans colored on one side to determine the different combinations there are rather than offer a sheet of equations for which students provide answers. But I also can see that there is a need for systematic teaching, that the Project Approach is a complementary learning and teaching method. To do the initial investigation of facts for 7, the Project Approach--type learning is best; but when it is time to master these facts, the systematic approach has merit.

I had never really enjoyed the social studies topics in grade one. However, this year, I will use the Project Approach to develop the units. I am confident that they will be very successful. I am eager to begin. Perhaps that is the major battle. If I am truly motivated by what the class will be doing, that enthusiasm will passed to my students, and success will be guaranteed.

The way I perceive my students has changed somewhat. My students are capable of completing any task they undertake. I spend more time developing their strengths, rather than focusing on their deficiencies. This has meant a change in the way I report student progress to parents. I still must complete a report card but I do so with many anecdotes

directly relating to work completed rather than percentages or marks. As well, a monthly portfolio is sent home to parents.

Future Plans

I am now back within the familiar confines of my grade one classroom, working with a new group of eager five and six year old students. I do know that I will be doing Project work in my classroom this year. The first I will try will be in conjunction with Topic A of our Social Studies curriculum, My School. I also plan to use the Project Approach on a study of Toys before Christmas. This time I plan to start earlier so that it can be completed. As well, all my science units will be undertaken with the Project Approach. The possibilities are endless.

I hope to encourage my staff to become participant observers in each elementary classroom at least once during this school year. The benefits that will be derived will have many implications for our total school program as well as for the individual classroom.

I have become more committed to the "Shared Learning" concept with other grades in the school. I would hope to expand this into a mentorship program. I see many possibilities for developing knowledge, skills, attitudes, and dispositions. The later two, I believe, would benefit most from mentorship.

And I do know that I plan to do more work as a teacher-researcher. The time I have available to me as a participant observer is limited but there are other ways that I can keep doing research within my classroom.

REFERENCES

Adler, P. A. & Adler, P. (1987). Membership roles in field research. Newberry Park, CA: SAGE Publications.

Ames, C., & Ames, R. (1984). Goal structures and motivation. The Elementary School Journal, 85(1), 39-51.

Ames, C., & Ames, R. (1985). Research on motivation in education: The classroom milieu (Vol. 2). New York: Academic Press, Inc.

Bogdan, R. C., & Biklen, S. K. (1982). Qualitative research for education: An introduction to theory and methods. Boston: Allen & Bacon.

Boostrom, R. (1994). Learning to pay attention. Qualitative Studies in Education, 7(1), 51-64.

Borg, W. R. (1979). Educational research: An introduction. New York: Longman.

Bredekamp, S. (1987). Developmentally appropriate practice in early childhood programs serving children from birth through age 8. Washington, DC: National Association for the Education of Young Children.

Brophy, J. (1983). Conceptualizing student motivation. Educational Psychologist. 18(3), 200-214.

Brophy, J. (1997). Synthesis of research on strategies for motivating students to learn. Educational Leadership, 45(2) 40-48.

Burchfield, D. W. (1996). Four developmentally appropriate curricular and instructional strategies in primary grade classrooms. Young Children, 52(1), 4-10.

Cambourne, B. (1995). Toward an educationally relevant theory of literacy learning: Twenty years of inquiry. The Reading Teacher, 49(3), 182-190.

Chard, S. C. (1992). The project approach: A practical guide for teachers. Edmonton: Quality Color Press, Inc.

Chard, S. C. (1992). The project approach: A second practical guide for teachers. Edmonton: Quality Color Press, Inc.

Clandinin, D. J. (1993). Teacher education as narrative inquiry. Learning to teach, learning to learn. New York: Teachers College Press.

Craig, C. (1994). Children talking to learn. Reading, 28(2), 2-5.

Creswell, J. W. (1994). Research design: Qualitative and quantitative approaches. New York: Teachers College Press.

Csikszentmihalyi, M. (1996). Creativity: Flow and the psychology of discovery and invention. New York: Harper-Collins.

Csikszentmihalyi, M. (1997). Finding flow: The psychology of engagement with everyday life. New York: Harper-Collins.

DeCharms, R. (1976). Enhancing motivation: Change in the classroom. New York: Irving Publishers, Inc.

Deci, E. (1975). Intrinsic motivation. New York: Plenum Press.

Denzin, N. K., & Lincoln, Y. S. (1994). Handbook of qualitative research. Thousand Oaks: SAGE Publications.

Dewey, J. (1938). Experience and education. London: Collier Books.

Diffily, D. (1996). The project approach: A museum exhibit created by kindergartners. Young Children,51(20), 72-75.

Dorward, J., & Archibald, S. (1994). Linking teacher interests or backgrounds to real-world experiences for students. Arithmetic Teacher, 41(6), 300-303.

Dweck, C. S., & Burhans, K. K. (1995). Helplessness in early childhood: The role of contingent worth. Child Development, 66(5-6), 1719-1736.

Dweck C. S., & Leggett, E. L. (1998). A social-cognitive approach to motivation and personality. Psychological Review, 95(2), 256-273.

Dweck, C. S., & Smiley, P. A. (1994). Individual differences in achievement goals among young children. Child Development, 66(5-6), 1723-1743.

Edwards, C., Gandini, L., & Forman, G. (1993). The hundred languages of children: The Reggio Emilia approach to early childhood education. Norwood, N.J.: Ablex Publishing Corp.

Ellis, J. (1998). Introduction: The teacher as interpretive inquirer. In J. Ellis (Ed.), Teaching from understanding: Teaching as interpretive inquirer. (pp. 5-14). New York: Garland Publishing.

Ellis, J. (1998). Interpretive inquiry as a formal research process. In J. Ellis (Ed.), Teaching from understanding: Teaching as interpretive inquirer. (pp. 15-32). New York: Garland Publishing.

Ellis, J. (1998). Creative assignments that promote learning and understanding. In J. Ellis (Ed.), Teaching from understanding: Teaching as interpretive inquirer. (pp. 57-77). New York: Garland Publishing.

Ellis, J. (1997, November). Workshop on qualitative research. Paper presented at Kingston, Jamaica.

Feldman, R. S. (1986). The social psychology of education. New York: Cambridge University Press.

Fraenkel, J. R., & Walloon, N. E. (1990). How to design and evaluate research in education. New York: McGraw-Hill.

Freinet, C. (1993). Education through work: A model for child-centred learning. Lewiston: The Edwin Mellen Press.

Gallas, K. (1995). Talking their way into science. New York: Teachers College, Columbia University.

Gallas, K. (1997). The languages of learning: How children talk, write, dance, draw, and sing their understanding of the world. New York: Teachers College, Columbia University.

Gardner, H. (1989). To open minds: Chinese clues to the dilemma of contemporary education. New York: Basic Books, Inc.

Glaser, B.G., & Strauss, A.L. (1967). The discovery theory. Chicago: Aldine.

Goodlad, J. I.; Klein, M., Francis, & Associates (1970). Behind the classroom door. Washington, Ohio: Charles A. Jones Publishing Co.

Hiebert, E.H. (1990). Research directions: Starting with oral language. Language Arts, 67(5), 502-506.

Helm, J. H., Beneke, S., & Steinheimer, K. (1998). Windows on learning: Documenting young children's work. New York: Teachers College Press.

Katz, L. G. (1996). Lilian Katz on the project approach. Early Childhood Today, 10(6), 20-21.

Katz, L. G. (1994). The project approach (Report No. EDO-PS-94-6). ERIC Digest. Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education. ED 368 509.

Katz, L. G. (1993). Dispositions as educational goals. ERIC Digest. Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education. ED 363 454.

Katz, L. G. (1989). Early childhood education: What research tells us. Bloomington, IN: Phi Delta Kappa Educational Foundation.

Katz, L. G. (1985). Research currents: Teachers as learners. Language Arts, 62(7), 778-782.

Katz L. G., & Chard, S. C. (1996). The contribution of documentation to the quality of early childhood education. ERIC Digest.Urbana, IL: ERIC Clearinghouse on Elementary and Early Childhood Education. ED 393 608.

Katz, L. G., & Chard, S. C. (1989). Engaging children's minds: The project approach. Norwood: Ablex Corp.

LeeKeenan, D., & Edwards, C. P. (1996). Using the project approach with toddlers. Young Children, 52(5), 31-35.

Levy, S. (1996). Starting from scratch: One classroom builds its own curriculum. Portsmouth, NH: Heinemann.

Lynch, D. J. (1991). Teaching students to be internally motivated. Reading Improvement, 27(2), 155-157.

McCombs, B.L. (1996). Understanding the Keys to Motivation to Learn. On-line:http://www.mcrel.org/products/barbaram.html.

Merriam, S. B. (1998). Qualitative research and case study applications in education. San Francisco: Jossey-Bass Publishers.

Morse, J. M. (1994). Critical issues in qualitative research methods. Thousand Oaks: SAGE Publications.

New, R. S. (1993). Reggio Emilia: Some lessons for U.S. educators. ERIC Digest. Urbana, IL: ERIC Clearinghouse on Elementary and EarlyChildhood Education. ED 354 988.

Noddings, N. (1992). The challenge to care in schools. New York: Teachers College Press.

Paley, V. G. (1986). On listening to what children say. Young Children, 56(2), 122-131.

Paris, S. G., Olson, G. M., & Stevenson, H. W. Learning and Motivation in the Classroom. Hillsdale, NJ: Lawrence Erlbaum Associates.

Roberts, V. (1971). Playing, learning and living. London: Black.

Roopnarine, J. L., & Johnson, J. E. Approaches to early childhood education. New York: Merrill.

Shute, R. W., & Gibb, S. (1993). Students of thought: Personal journeys. Calgary, AB: Detselig Enterprises Ltd.

Stipek, D. (1988). Motivation to learn. Englewoods, N.J.: Prentice-Hall.

Tough, J. (1976). Listening to children talking: A Guide to the appraisal of children's use of language. London: Ward Lock Educational.

Trepanier-Street, M. (1993). What's so new about the project approach? Childhood Education, 24(3), 25-28.

Ulich, R. (1954). Three thousand years of educational wisdom: Selections from great documents. Cambridge: Harvard University Press.

Ulich, R. (1968). History of educational thought. New York: Van Nostrand Reinhold Co.

van Manen, M. (1990). Researching lived experience: Human science for an action sensitive pedagogy. London, ON: Althouse Press.

Weiner, B. (1980). Human motivation. San Francisco: Holt, Rinehart and Winston.

Yin, R. K. (1994). Case study research: Design and methods. Thousand Oaks: Sage Publications, Inc.